MAY 21 1888
542

PRICE 15 CENTS

MAY 19, 1888.

THE AMERICAN ARCHITECT AND BUILDING NEWS

VOL. XXIII. REGULAR EDITION NO. 647.

ARCHITECTURE

ENGINEERING

DECORATION

CONSTRUCTION

TICKNOR & COMPANY

BOSTON MASS.

CONTENTS.

Editorial Summary.
Letter from Washington.
" " Cincinnati.
" " Chicago.
The Manufacturing Uses of Eggs.
The Old and the New.
Jottings about the United States.
M. Viollet-le-Duc's Letters.
Books and Papers.
Communications.
Notes and Clippings.
Trade Surveys.

ILLUSTRATIONS.

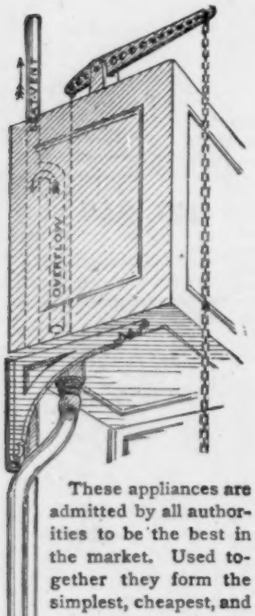
House on Hereford Street, Boston. Mass.
(Helio-Chrome issued only with Imperial Edition.)
Gothic Spires and Towers. Plates xiii, xiv, xv.
[Issued only with the Imperial Edition.]
Competitive Designs for the Indiana Soldiers' and Sailors' Monument.
House at Morristown, N. J.
Church at Los Angeles, Cal.

THE CELEBRATED

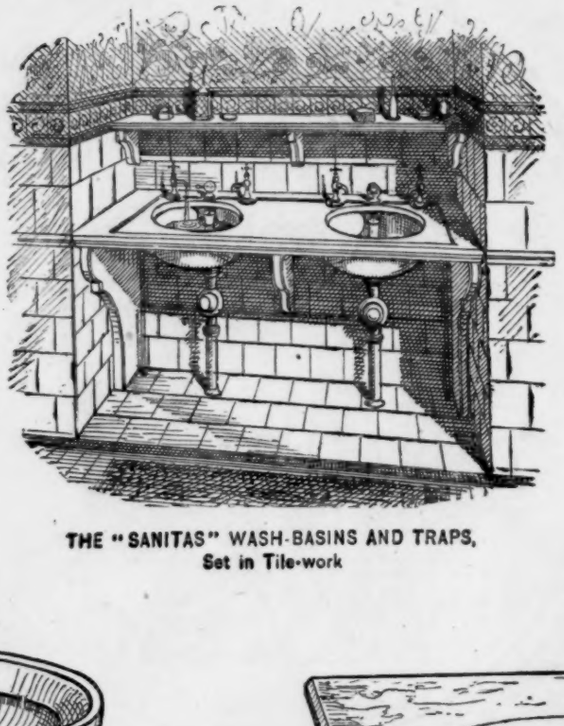
SANITAS

PLUMBING

APPLIANCES.



These appliances are admitted by all authorities to be the best in the market. Used together they form the simplest, cheapest, and only perfectly safe sanitary system now known.



THE "SANITAS" WASH-BASINS AND TRAPS, Set in Tile-work

"SANITAS" TRAP OPENED.

The Sanitas Trap, whether vented or unvented, has shown itself when properly set to be capable of resisting indefinitely, siphonage, back-pressure, and all other adverse influences met with in plumbing.

The "Sanitas" Basin flushes out the pipes and keeps them clean.

THE "SANITAS" MFG. CO.

THE "SANITAS" MFG. CO.

THE "SANITAS" WATER-CLOSET.

THE "SANITAS" WASH-BASIN.

("SANITAS" BATH-TUB and PANTRY-SINK on same principle as Basin.)

THE AMERICAN ARCHITECT AND BUILDING NEWS.

VOL. XXIII. Copyright, 1888, by TICKNOR & COMPANY, Boston, Mass. No. 647.

MAY 19, 1888.

Entered at the Post-Office at Boston as second-class matter.

CONTENTS.

SUMMARY: —
Burning of St. Paul's Cathedral, Buffalo, N. Y. — Fall of a Vaulted Floor at Columbus, O. — Fall of a Floor at Bellefonte, Pa. — Proposed Coöperative Club for Women in New York. — The New York Arcade Railway. — The Remains of Babylonian Library Treasures. — Reclaiming Lake Aboukir, near Alexandria. — The Heine System of House-heating. — London Railway Traffic. — Translation of a Book on Sanitation by the Princess Christian. 229
LETTER FROM WASHINGTON. 231
LETTER FROM CINCINNATI. 232
LETTER FROM CHICAGO. 232
THE MANUFACTURING USES OF EGGS. 233
ILLUSTRATIONS: —
House on Hereford Street, Boston, Mass. — Gothic Spires and Towers. Plates 13, 14 and 15. — Competitive Designs for the Indiana Soldiers' and Sailors' Monument. — House at Morristown, N. J. — Lutheran Church, Los Angeles, Cal. . 234
THE OLD AND THE NEW. 234
JOTTINGS ABOUT THE UNITED STATES. 235
SOME LETTERS OF VIOLLET-LE-DUC'S 236
BOOKS AND PAPERS. 237
COMMUNICATIONS: —
Illustrations of Boston Public Buildings. — American *vs.* French Architectural Training. 238
NOTES AND CLIPPINGS. 238
TRADE SURVEYS. 240

BY the burning of St. Paul's Church in Buffalo, the cathedral church of the Episcopal diocese of Western New York, not only is a severe loss inflicted upon the community interested, but a lesson is taught in regard to the danger of using natural gas for fuel which should be laid to heart. The heating furnaces in the church were supplied with natural gas from the mains belonging to the Company which controls the wells. By some derangement of the valves at the works, according to the newspaper accounts, the pressure in the mains appears to have been suddenly increased to a dangerous degree, and several meters burst, and small explosions occurred, in various parts of the town, while in the cathedral the escape of gas was so copious that as soon as fire communicated to it from the furnaces, the doors were blown out, together with portions of the windows, and flames immediately followed, in such volumes that the whole interior of the building was destroyed in about half an hour. Soon after the arrival of the fire-engines on the ground the roof fell in, and nothing now remains of the church but the walls and spire.

A STRANGE accident occurred a few days ago at Columbus, O., where a vaulted floor gave way on the removal of the centring, falling upon the men employed in taking out the timbers, killing two and severely injuring the third. The arch, which is said to have been in one span, about twenty-three feet wide, was of brick, levelled up with Portland cement concrete. According to the accounts, the rise of the arch was but two feet, and we are not told what sort of abutment was provided to resist the great thrust of such an arch, so that it is not difficult to account for the catastrophe on several suppositions, one of which would be that the rigid Portland cement concrete may have separated from what might have been the compressible ring of brickwork beneath it, so as to allow both to fall independently of each other. We hope, by the way, that some one is keeping notes of all the building accidents in which Portland cement plays a part. As used by inexperienced persons, it is certainly a dangerous material. Our professional brethren abroad have learned to take various precautions against over-liming, under-burning and other defects, of which we know little, and as we, presumably, often get the cement shipped to us which the foreign engineers have rejected, it is all the more important to be on our guard.

ANOTHER building accident is reported from Pennsylvania, where the floor of a public hall gave way during a school exhibition, precipitating five hundred people a distance of twenty feet to the ground, killing two outright, and seriously or fatally injuring many others. As usual in such cases, the central portion of the floor gave way first, so that the people in the room fell from all portions toward the middle, probably saving the lives of those nearest the sides of the room, at the expense of those near the centre, who were underneath in the final crash. To all appearance the accident was due simply to the insufficiency of the floor-timbers. Very few builders take the trouble to calculate the resistance of the beams which they use over spans out of their ordinary experience, and it is not likely that the strength of the floor was much greater than that of an ordinary dwelling-house, instead of being, as it ought to have been, at least four times as great.

MRS. CANDACE WHEELER, of New York, seems likely to be long remembered in this country, not only for her brilliant talents as an artist and decorator, but for her successful efforts in behalf of those of her sex, who from inclination or necessity, earn their living by their own efforts. In her own profession, Mrs. Wheeler has successfully united the labors of a large number of women by the organization of the Society of Associated Artists, whose beautiful work in decoration and embroidery is well-known to most architects, and, applying a similar idea to a more extended form of association, she is said to have been the founder of the Woman's Exchange in New York, which has served as the prototype of many others in various cities, and has opened to skilful and industrious women a market for their productions such as they could not have hoped for a few years ago. The latest scheme of this sensible and clear-sighted lady, is, according to the *Mail and Express*, the establishment of a hotel, or rather, a sort of coöperative club, where fifty or a hundred women, whom circumstances have made self-dependent, may make pleasant homes for themselves. It is intended to have the establishment managed, like a club, by committees of boarders and stockholders, so that the women interested may enjoy the pleasure of regulating to a certain extent their own household affairs, while the economy possible to combined housekeeping will, it is thought, enable the managers to keep the expense of pleasant rooms and comfortable living down to about six dollars a week, even in New York. How much pleasanter to most women such a place would be than a second-rate boarding-house, it is hardly necessary to point out, and there is no reason why the plan should not prove completely successful as a business enterprise. It is notorious that the largest and best hotels in Europe are frequently, if not generally, managed by women, and the endless detail of foresight and economy necessary for such work seems to be particularly congenial to the sex. Women, moreover, care very little about the pretentious extravagance which is apt to bring masculine clubs to grief, and, so long as they can live comfortably, and with a certain amount of pleasant company, in a clean, attractive house, which they have some voice in managing, most of them will be quite content, without trying to dazzle strangers with affectations of wealth. For such persons coöperative housekeeping is a simple matter. It has been repeatedly tried in New York on a small scale, with complete success, and a house for not more than a hundred women, planned with economy, so as to save as much as possible in the important item of rent, ought to be certain of paying dividends, as well as expenses. The building which it is proposed to erect will be fireproof, and is intended to cost, with the land, between one and two hundred thousand dollars. The necessary amount has not yet been fully subscribed, but a considerable portion has been promised, and as soon as the rest is secured, the construction will begin.

AFTER twenty years of waiting, the Arcade Railway Company, of New York, is said to have completed the contracts for the construction of the first five miles of its line, from the Battery to the Grand Central Railway Station on Forty-second Street, and it is expected that work will begin in a few days. The names of the contractors have not been made public, but the Directors of the Arcade Company are satisfied of their ability to carry out the work, and various bankers in France and Germany are reported to be ready to take the bonds which are to be issued in payment for construction as security for advances of the necessary cash. According to the New York *Times*, the Company has already spent in surveys and other preliminary work about four hundred thousand dollars. Large as this sum seems, it is not perhaps too much for such minute and thorough study of every detail of location, construction and cost as has been going on for the past twenty

years, and it is a satisfaction, after the developments in regard to the Broadway Surface Railway, to be able to credit the positive assurances of the Arcade officials, that not a dollar has been used to influence legislation, or for any other secret or dishonorable service.

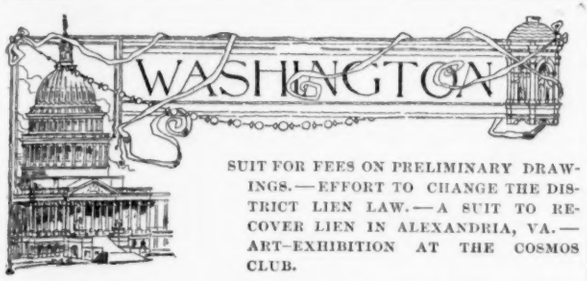
SOME lectures have been recently given at the British Museum upon the art of ancient Babylonia, which are reported in the *Builder*. It is hardly necessary to say that since the discovery of several subterranean stores of cuneiform inscriptions, made upon cones of clay, our knowledge of Babylonian ways has become greatly enlarged, and it may not be long before as much is known of the history of Mesopotamia as of ancient Egypt, where, as some one says, the events which occurred in the fifteenth and sixteenth centuries B. C. are recorded with greater precision, and in more minute detail, than the history of any European State in comparatively modern times. It is not long since a great number, some forty thousand, we believe, of inscribed cones were discovered, and sent to the British Museum to be deciphered, and a few months ago, while hardly more than a beginning had been made in translating the first consignment, two hundred thousand more were dug out of a subterranean chamber under the mound of Tel Ibrahim. This chamber is supposed to have been one of the "stack-rooms" of a great public library, of which five are known, from inscriptions, to have existed, in what we should call the five university towns of the Empire, Borsippa, Kutha, Larsa, or Larissa, as some maps call it, Eridu, and Babylon. Not only is the existence of these centres of learning well attested by the inscriptions, but we know the character of the sciences principally cultivated in each, Eridu and Kutha having been the seats of theological knowledge, while Borsippa was the centre of technical instruction, and Larsa of mathematics; and the library attached to each was mainly devoted to books, or rather tablets, of appropriate character. Not only were these libraries well stocked, but the books were arranged and catalogued with such skill that the authorities of the British and the Continental museums have adopted the ancient system as being still the best for the sort of material with which it dealt. Most people will remark the similarity between this sort of literary, or rather educational enthusiasm, and the passion for scholarship which still exists among the educated Chinese, and it is not very surprising to find that it is now regarded as certain that the Chinese writing is intimately related to the cuneiform character, as if the people of Mesopotamia had diffused civilization eastward to the Chinese valleys, as well as westward to Asia Minor, and indirectly to Greece and Rome.

A SCHEME for reclaiming the bed of a lake is now in process of execution in Egypt, where, among other important engineering works, the water of Lake Aboukir, a salt pond, covering about fifty square miles, and situated near the city of Alexandria, is being pumped into the Mediterranean. According to the account in the *Pall Mall Gazette*, the lake was formed about two hundred years ago by an irruption of the sea, which, in a violent storm, broke through the high ground near the shore, and overflowed thirty-one thousand acres of a very fertile and populous district in the suburbs of Alexandria. After the establishment of English control in the country, a company was formed to reclaim this valuable territory, and on the 8th of March last two enormous pumps began to lift the lake into the Mediterranean at the rate of four hundred and sixty tons per minute. We will not attempt to quote the *Pall Mall Gazette's* amazing statements of the efficiency of the pumps; it is enough to say that the officers of the company expect to have the lake drained in about a month. The next problem is to get rid of the salt, which, in a rainless country, would render the reclaimed soil unproductive for many years, but the company's engineers have provided for this by arranging to intersect the lake-bed with ditches, after which, at the time of flood in the Nile, the great Mahmoudieh Canal will be cut, and fresh water will be allowed to flow into the lake. This will dissolve the salt, and, after a suitable interval, the pumps will again be set at work, and the land, now free from salt, will be prepared for cultivation. The ground is said to be so rich and so near the great market of Alexandria, that it will easily bear a rent of fifty dollars per acre, and, as the pumping will cost only about two hundred and fifty thousand dollars, and, by concession from the Government, a portion of the taxes on the territory is to be remitted for a term of years, the managers of the enterprise expect to make a profit of four or five million dollars.

A MEMBER of the London School Board writes to the *Builder* a careful and very complimentary description of Heine's patent system of house-heating. This system appears in two forms. Under the first, as applied to school and dwelling rooms, it seems to consist in setting up in the room what we should call a "school stove," or a "Fire-on-the-hearth" stove with the blower permanently closed. Fresh air, as in our apparatus, is brought from out-of-doors by a pipe to the space between the inner and outer shell of the stove-casing, and, after coming in contact with the convoluted smoke flue, as well as the outside of the combustion chamber, escapes into the room by an opening in the top of the stove. The only novelty about the affair seems to consist in a sectional arrangement of the castings, by which any portion can be taken out and replaced at pleasure. In the "Central Heating" form of the system, the stove of the other form is magnified to a furnace, which is placed in the cellar of the building to be warmed, and delivers fresh air, received from the outside, warmed into the rooms above. A cold-air supply to the cellar, with suitable valves, allows cold air to be mixed with the warm current before delivery to the upper rooms, so that the temperature can be regulated very accurately. The device by which the temperature of each room is known at all times to the fireman in the basement is, we think, new in this country. In each room are placed two thermometers, one large one, permanently fixed to the wall, and a small one, which appears only in a cavity by the side of the room, communicating with a flue extending through the masonry to the cellar. When the fireman wishes to ascertain the temperature of a given room, he pulls one side of an endless cord, which passes through the flues in the walls to the cavity containing the small thermometer for that room, and the thermometer is brought down for him to inspect and is then returned by the same means to its place.

THE *Revue Industrielle*, which, like all the other French technical journals, interests itself just now in city railways, has been publishing statistics of the New York elevated roads, and now gives some figures in relation to the London Metropolitan lines. Every one knows that the traffic on the London roads is very large, but the actual figures are rather startling. The busiest local station on the underground railway is that of Clapham, or Clapham Junction, where, on an average, fifteen hundred trains a day are received and despatched. Of course, a large part of these are freight-trains, but from seven o'clock in the morning until midnight a passenger train leaves the Clapham Station every ninety seconds. The station itself covers about twenty-three acres of ground, and contains nine parallel tracks, besides spurs and branches. The ticket offices are situated in a tunnel, which traverses the station beneath the tracks, and stairs ascend from this tunnel to the different platforms. Among the terminus stations, that of the Great Eastern Railway in Liverpool Street, near the Bank of England, is the busiest, despatching eight hundred trains every twenty-four hours. When the re-arrangement of the station, now in progress, is finished, it will contain fifteen tracks, thirteen of which will have platforms beside them, varying in length from five hundred to a thousand feet. This is only one out of seventy-three stations that the Great Eastern Railway possesses in London, forty-five of which are for passengers alone. The ordinary local train on the Great Eastern lines consists of fifteen cars, each containing fifty seats for second or third-class passengers, or thirty-two seats for first-class, the trains averaging six hundred places in each. All the stations on this, as on all the other railways terminating in London, communicate by means of underground lines, so that a passenger arriving at any station, from any part of England, can be transferred to any other part by stepping across a platform and waiting until the proper train comes along.

THE architects who interest themselves in sanitary matters, and who sometimes feel as if they were looked down upon by the lofty-minded artists who cannot bring their thoughts to dwell on such details, may be encouraged to know that no less a personage than her Royal Highness the Princess Christian of Schleswig-Holstein, Princess of Great Britain and Ireland, third daughter of Queen Victoria, has made an excellent translation into German of Dr. S. Pridgin Teale's lively book on house-drainage, which, with the startling illustrations of the original, has just been published, under the name of "*Lebensgefahr im Eigenen Hause*," by Lipsius and Tischer, in Leipzig and Kiel.



SUIT FOR FEES ON PRELIMINARY DRAWINGS. — EFFORT TO CHANGE THE DISTRICT LIEN LAW. — A SUIT TO RECOVER LIEN IN ALEXANDRIA, VA. — ART-EXHIBITION AT THE COSMOS CLUB.

RECENTLY a Washington Architect, Mr. T. F. Schneider, had occasion to bring suit against a client, Mr. John F. Waggaman, for payment of fees due on preliminary drawings. It was a jury trial in the Circuit Court, and the case was as follows: Mr. Waggaman ordered the drawings to be made for three houses, but did not wish the complete working-drawings until he should fully make up his mind whether he would hold the lots or not.

The preliminary drawings were duly prepared, Mr. Waggaman being consulted and coming to Mr. Schneider's office repeatedly to give instructions. He wished houses to cost five thousand dollars each, but his instructions required houses that would cost six thousand, and so the architect informed him. After patiently waiting for the order to complete the work, Mr. Schneider sent in a bill for preliminary drawings, $150, being one per cent on $15,000, the amount which Mr. Waggaman desired the houses to cost. The bill was returned endorsed, "I owe you nothing." Hence the suit.

Mr. Waggaman's defence was, that he expected to pay for the drawings in case he should use them.

Mr. Schneider proved that nothing was said as to fees for such work, and that he had charged only the usual fee. The jury made an award of one hundred dollars to the architect. Some were for the full amount of the claim, others were for fifty dollars, and they awarded the mean or one hundred dollars. This case could only be called a partial success, as the jury did not allow the full rates customary among architects and as endorsed by the American Institute of Architects. But it proves that juries are becoming more enlightened than they were not many years ago.

The District Lien Law is very defective, in that it gives dishonest contractors and sub-contractors an unlimited opportunity for swindling the owners.

The lien need not be filed against the property for ninety days, and contractors, sub-contractors, material-men and laborers have the right of lien. No notice is required for ninety days after completion of building. Sometimes a lien might be filed a year after the material was furnished, for which the claim was made — for instance, stone laid in footing courses. Many are the instances where owners have found it necessary to pay twice for the same work. They cannot protect themselves except by bond running for three months, and all know that this is not a guaranty, neither are small builders or small house-holders usually prepared or willing to undergo the formality of making or giving bonds.

A bill was introduced into the House of Representatives recently to amend this law with the following notice clause:

"*Provided further*, That no lien shall attach for materials contracted for or furnished, unless the person contracting for or furnishing the same, before furnishing the same, gives notice in writing to the owner of the property to be affected by the lien, if such owner is not the purchaser of such materials, that he intends to claim such lien."

This is nearly the same clause that is in the Massachusetts Lien Law.

Congress has done nothing yet in the matter except to have the bill read twice, referred to the Committee on the Judiciary and ordered to be printed. It is hoped that action will soon be taken and the bill passed, as it prevents many timid persons from building.

An interesting case was decided in Virginia recently, where the lien law is very much like the one in force in the District, but bearing less severely on the property-owner. The case was as follows:

Mr. Summers, the defendant and owner, contracted with Mr. Stoutenburg, a builder, to erect a house in Alexandria, Va. Mr. Stoutenburg ordered material and mill-work from a Mr. Peake, a dealer in builders'-supplies, who in turn ordered the same from Atcheson & Bro., lumber dealers and building mill-workers, who furnished the material mentioned, the same being used in the construction of Mr. Summers's house.

The Judge in summing up the case states that in his opinion, it makes no difference whether the goods were furnished in the first place to Mr. Peake, and then delivered to Mr. Stoutenburg, or directly to Mr. Stoutenburg; further, that it makes no difference whether it was charged in a running account to Mr. Peake, and an effort was made by Aitcheson to collect from Peake. "The house is responsible, because plaintiff [Aitcheson] furnished material for its construction."

The Virginia Lien Law summarized it as follows:

Contractors, sub-contractors, material-men and laborers have a right to liens. Contractors must file their notices in the Register's Office within ninety days, and others who enjoy the right, within thirty days after completion of work or the delivery of material. The lien must be enforced within six months after last payment, or it lapses. The owner must have actual notice at time of the lien being filed.

The lien is prior to all debts, mortgages, etc., made after the contract for building is signed.

The Judge further says: "Of course, if an express contract between the party furnishing material and the owner of the land is necessary to the existence or creation of a lien, then notice would be unnecessary." The question in this instance was really between G. A. Mushback, Peake's assignee, and Aitcheson & Bro., the owner having retained sufficient money to pay either to whom the court should allow it.

The Judge says, "I do not think it difficult to determine between these two claimants which has the better equity . . . but I have contented myself with considering the sole question presented in argument, to wit: Whether or not under the facts disclosed by the record, if the plaintiffs (Aitcheson & Bro.) were in position to create a lien upon the building of Summers for supplies furnished by them and used in its construction. I am of opinion that plaintiffs are entitled to the relief they ask."

During the first part of April an exhibition of oil and water-color paintings, etchings, drawings and sculpture, was held in the assembly rooms of the Cosmos Club. It was a local exhibit, or rather, the exhibitors were residents of Washington City. The walls were quite well covered and the work was creditable to Washington artists. Several landscapes in oil by Max Weyl, portraits by A. G. Heaton and E. A. Poole, were the most notable in their department.

E. J. Major exhibited a very effective flower piece — a large bowl filled with poppies. Mr. Major is the winner of the Harper prize-scholarship in Paris.

The water-color exhibits were fair; one very good marine landscape by Holmes, was broadly and effectively treated, the colors, lights and shades being well handled.

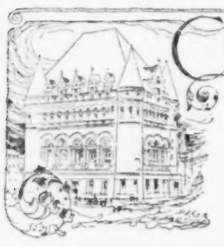
The Washington League, a number of students, had a department to themselves, and show some very interesting and artistic work for students. Their water-colors and sketches being particularly effective.

The Architectural exhibit, the branch in which we are most interested, was limited to a few contributors. The exhibits of Messrs. Cluss & Schulze were, by far, the most important. The first was a perspective of the new Catholic University at Washington, the design to which was awarded the first prize in the competition, while the commission for the work was given to Mr. Baldwin, of Baltimore, who was not a competitor but a relative of a high church official. The invitation implied that the commission would be given to the successful competitor, but the authorities, it seems, where not technically bound to put such a construction on their invitation. The same architects also had on exhibition their design for the Mexican Monument, in which they are not only the successful competitors, but for which they received the commission. The design submitted by Messrs. Cluss & Schulze, for the Parliament Houses in Germany, was an imposing and effective design in Lombard Gothic, which, I understand, received the first rating for that style in the competition. The drawings are well rendered, and the whole is worthy of a much more extended notice than I can give it in this letter. Two of Mr. Schulze's pen-and-ink sketches, "The Natural Bridge, Va.," and "A Portrait of Michael Angelo," are excellent examples of such work.

Mr. Glenn Brown contributed two competitive designs, one for the Kansas City Exchange, and the other for the Soldiers' and Sailors' Monument of Indiana, both a free treatment of Romanesque work, the drawings being simply in outline. He also contributed the drawings for the old colonial work recently published in the *American Architect*, interesting only from association and showing what our grandfathers did.

Mr. Robert Stead contributed two perspectives, one of an apartment-house, the other a private dwelling. Although there has undoubtly been a large number of effective and artistic residences erected in this city in the last few years, there were none worthy of mention on exhibition. The only ones being two sketches in color by H. L. Page, two by Henry Law and one by Messrs. Hornblower & Marshall. This lack of private work in the exhibition may be attributed to the fact that few architects make show drawings of such buildings, contenting themselves with making the necessary working-drawings.

A PROTECTOR FROM ELECTRIC SHOCKS. — The danger which employés of electrical stations using high tension currents run by accidental contacts is well-known. In view of this, notes the New York *Sun*, P. B. Delaney of that city has devised a pair of bracelets and a pair of anklets connected by flexible cords and arranged to be worn by a lineman in such a way that if he should close a high potential circuit through his hands it is hoped that a considerable part of the current would be switched off his body away from his vital parts to expend itself by passing out through the skin or some part of the body removed from the vitals. Electricians say, however, that there is a question whether the current will not prefer to continue in the man rather than leap out when it met these bracelets, which would offer somewhat higher resistance than the human body. Of course the inventor believes that the fluid would prefer the matter to the flesh.



CINCINNATI.

THE OUTLOOK. — CHAMBER OF COMMERCE BUILDING. — NEW CITY-HALL. — COMING EXHIBITION OF ARCHITECTURAL WORK.

TAKING out three or four important buildings that are under way in this city, the general cry is that there is a dulness in the building line, the like of which has not been seen for several years, and the outlook does not seem encouraging for the season.

Just why this state of affairs exists is hard to tell, but, no doubt, the recent bank failures have had much to do with the depression, as it took several millions of dollars out of the city, and other cities received the benefit; our loss is their gain.

Of the important work now going on, the first and foremost is the Chamber of Commerce Building designed by the late Mr. H. H. Richardson, and it is, no doubt, his best work, as it was the last building he designed, as he died before the drawings were entirely completed. The walls of the building are now completed and the iron roof is about finished, and as this splendid piece of architecture nears completion, it bespeaks the genius of the architect and satisfies the architectural eye. It is built of light colored granite, is very massive in its design and proportions, and when finished will be a lasting monument to the advanced architectural ideas of the nineteenth century.

The new City-hall, under charge of architects Samuel Hannaford & Sons, will be the most important building started during the year: it will be a large fireproof building containing all the city offices, and will occupy a large part of the square bounded by Eighth, Ninth and Plum Streets and Central Avenue; the building will cost about $600,000, and a more detailed description will appear in a later number.

The new Exposition Buildings by Siter and McLaughlin (each architect built one of the two buildings) are finished and present a large appearance; and speaking of these buildings reminds us that it is the intention to have the best architectural exhibit (drawings, photographs, sketches, etc.) that has ever been held in the Central States; every effort is being made and every assurance is given that the undertaking will be a success. This exhibition is open to all architects, and transportation of pictures both ways will be paid by the Commissioners. Architects who desire to take part in this great opportunity (and all are urged so to do) should communicate soon with Mr. Charles Crapsey, Chairman of the Committee, having the matter in charge. These exhibits do much toward bringing the architects and general public together, and should be taken advantage of.

The Cincinnati Society of Architects, with nineteen members, had their annual meeting recently, and the following officers were elected to serve the coming year:

President, Charles Crapsey; Vice-President, H. E. Siter; Secretary, Gustave Drach; Treasurer, W. M. Aiken.

CHICAGO.

THE PROGRESS NORTHWARD OF THE RESIDENTIAL QUARTER.— DETACHED HOUSES IN TOO SMALL "GROUNDS." — FOUR HOUSES ON THE LAKE-SHORE DRIVE.

THE rapid movement of the centre of fashionable residence on the North Side, still farther towards the north, is quickly building up with costly houses a district which but five or six years ago was almost a barren waste of sand, or a dumping-ground for the omnipresent old tin can. The improvement of the street upon the very shore of the lake was begun by widening it and making it a part of the boulevard system, thus placing it under the control of the Park Commissioners. It has now been macadamized and planted with trees, so that these improvements, together with the magnificent view it has off over the lake, have tended at once to make this Lake-Shore Drive and its vicinity the most desirable residential part of the North Side, and it is, without doubt, destined to soon become the handsomest and most aristocratic portion of that quarter of the city. There are now practically finished on this drive a group of four houses probably finer than any four others within the same radius in the city. The one on the corner of the Drive and Schiller Street is from plans by Richardson, while the three houses immediately north are by three of the best known firms in Chicago.

When standing at a distance and looking at the group one cannot but be surprised, first of all, that in building such palaces the owners should have been so niggardly of land. Could there have been fifteen or twenty feet more of yard at the side of each house, the appearance of every one would have been improved at least fifty per cent. As it is, they are jammed together as if the owners were men either of the most limited means or most niggardly spirits.

If a yard is wanted, by all means have it large enough to produce some effect, but if only light-shafts are needed, why should a house be built as if in the midst of fine grounds? If people desirous of a fine effect would but spend more on the ground and less on the building, they would get a great deal more for their money than they now do. However, real generosity of surroundings to a house seems to be something that cannot be understood in this part of the country. Even the present United States Minister to Belgium, a man of great wealth, owning among other property an entire vacant block on the North Side, crowded the house he recently built up into one corner of this same block, leaving no grounds either at the north or east sides. This state of affairs probably arises greatly from the fact that people insist on building a palace with exactly the same plans as a cottage — except that each room is proportionately enlarged — and also insist on erecting this palatial cottage as if in the country, but still have it in the city; instead of frankly occupying the whole ground and not trying to show any lawn except possibly at the front. Mr. Richardson alone seems to have appreciated this fact, and he has practically walled in his entire lot, leaving lawn only on the side of the drive. In looking at these houses one is next surprised (and, it might be added, disgusted) to find that with a single exception they all have only stone-fronts, while the sides and rears are of common "nine dollar yellow brick." Involuntarily one thinks of a gorgeous necktie covering up a dirty shirt. The more one studies these buildings, the more is one impressed with the fact that, notwithstanding certain impracticable things, Mr. Richardson is the only one who has truly studied his problem as a unit or whole; the others have all worked out their plans in detail and then put the parts together, while he evidently studied the problem as a whole, and the details come where they could and as they would. Even the wall joining house and barn binds the entire construction together in one design.

Taking the houses in detail and commencing at the south one, which is Mr. Richardson's, the general lines are extremely simple and very charming; especially pleasing is the grouping of the openings and their relative sizes; such perfect harmony is rarely seen; the only exception being with the main entrance which is so extremely small as to suggest a fortress, and this appearance is increased by the immense plain iron hinge-plates that nearly cover the door. On the lake front, in each of the three stories, is an arched loggia. No one can deny that the effect is eminently satisfactory — when judged simply for the effect — but at the same time it does seem decidedly impracticable in our climate where the thermometer rarely gets above ninety in the hottest weather, while for nearly three months it is liable at most any time to go down to twenty degrees below zero, and with a cutting wind off the lake does not make one long for suggestions of delicious coolness. As for the ornamentation or stone-carving, really, when one looks for it the quantity is small, but it is so grouped together and a few points are so emphasized by it, that the effect is charming. All the details of this cutting are exquisitely fine, yet so deeply are they carved that they produce a most decided impression even when the design cannot be distinguished in all its detail. The roof is covered with unglazed red tile which harmonizes perfectly with the color of the stone of the body of the house, and the large and simple expanse of roof-surface gives a warm effect of color to the building, without which it would appear cold and gray.

The house next on the north is of a grayish granite, with a black slate roof. The stone is rock-faced and in a very decided way shows (as for that matter do all the houses here spoken of) the influence of Mr. Richardson's work. The massive lintels and heavy blocks, especially in the basement wall, give it an air of strength and dignity, but the whole outline of the building and the grouping of the window-openings would seem to show that the exterior did not begin to have its proper share of study, or that the plan was made (probably with the too active assistance of the client) with the very strictest regard for every piece of furniture, and without reference to or thought of the elevation. The windows seem to have little or no idea of arranging themselves into harmonious groups, and most of these openings are unnecessarily large for a dwelling-house. Moreover, their size is accentuated by the frames and sashes being made excessively conspicuous by finishing in natural wood. The roof is too low, and had red slate or tile been used the result would have been much more effective. The one really fine feature of the house is the porch, which is formed by one corner of the building being carried on a heavy granite pier. This entrance is exceedingly dignified and well proportioned, so that with its wide and generous flight of steps it gives a remarkably fine appearance, and thereby relieves and quite alters what would otherwise be a very common-place front. Scarcely any attempt is made at mouldings in the granite. What carving there is on caps, lintels, etc., is of too large a design, and is not deep enough cut into the stone to produce much effect. The stable for this house is very neat and pretty, but, unfortunately, but little seen from the drive.

The next house is built of red sandstone, and is the smallest and least pretentious of the group. The outline of the roof and bay is simple and in good proportion, but, unfortunately, as much cannot be said of the front entrance, which, in a remarkable degree, is a miniature of the one just mentioned; but the process of reducing the size

to fit the house has, at the same time, taken away the very elements that made the former remarkably successful. The entrance way is cramped, the column at the corner becomes insignificant and the stone steps which might have somewhat redeemed the general effect, have a most unfortunate heavy and snake-like stone-railing. There is almost no carving but the tooling-down of the columns, finials, etc., and then putting no carving upon them has not improved these parts, as they now seem to have a very expectant air as if waiting the arrival of a sculptor (as may be the case). The slate roof harmonizes well with the stone, and renders the parts of the house above the first story the finest portion of the composition.

The fourth and last house of the group is of a grayish stone containing much mica, and from the fact that this material continues entirely around the house, leaving no back walls of common brick, it has a dignity and an air of solid worth that none of the others possess. Even its faults seem to be greatly atoned for, and at least in the general pleasure of seeing something that seems honest and true, one scarcely notes the dissonant points. Moreover, with a good, generous porte cochère it does not seem so much like the last two, a merely overgrown cottage, but appears as if the home of people of the world. Almost the only fault with the exterior of the building is the roof, which is simply enormous and, extinguisher-like, entirely overpowers and kills everything else. Moreover, the use of Spanish tile on such an exceedingly steep roof always seems a little questionable. The sky-line is broken by no small dormers, and the impression is at once conveyed that the roof-space is in no wise utilized, and that a vast amount of space has been wasted simply for show. The window-openings are well studied and grouped, and quite a novel feature for a house not on a corner is the main entrance frankly placed at the side, with the doorway opening off an arched recess or vestibule; the steps, landing and arch altogether making an effective feature. The stone not being adapted for carving, quite rightly no attempts have been made in this direction, and band mouldings are simply indicated by rough projecting courses. The stable is by no means on a par with the house, and of such an entirely different character as to cause remark at once and those not of a flattering kind.

When one considers the entire group of buildings as a unit, it is immediately evident that no care or thought was spent in studying the houses with reference to each other. Of course, this is sometimes a difficult thing to do, but in this case most of the houses were commenced at about the same time, and with very little trouble, at least the general outline and colors of stone and roof might have been known and taken into consideration, yet, very evidently nothing of the kind was done, but each party built to suit his own imperial pleasure and trusted to luck for harmony of surroundings. As a matter of course many things are inharmonious — for which there really was no need — except possibly the pride of the architects who were averse to consulting with any of their professional brethren for fear it might look to their clients as if they themselves did not know all that is to be known.

THE MANUFACTURING USES OF EGGS.[1]

EGGS, their dietetic use apart, are of great utility in many branches of industry. In some, as in confectionery, both the whites and yolks are used, but usually the two find separate applications. The whites are employed in calico-printing, in photography, in gilding, in clarifying wines and liquors, and by the book-binder on the leather previous to lettering or tooling.

It will thus be seen that there is a heavy drain on eggs for various manufacturing purposes. Many millions are used in France for clarifying wines. By this means a wholesome and nourishing article of food is taken away from public consumption and its price considerably enhanced. The clarifying of wines in France requires annually (at the rate of four eggs per barrel) more than 80,000,000 of eggs. Bordeaux alone uses 15,000,000 for this purpose and Paris 5,000,000. To avoid this, certain kinds of fining powders are now beginning to be employed, by which wines may be clarified with equal facility and at a smaller expense, and these are sold to the extent of about £8,000. Photographers consume a great quantity of eggs, and egg albumen is used for other purposes.

Egg Albumen. — The preparation of photographic paper with salted albumen has become in many hands a large business of itself. Some idea of the quantity used may be found in the statement that in one establishment alone upwards of 2,000,000 eggs have been employed in the course of six months to furnish the requisite quantity of albumen. In calico-printing, for fixing certain colors, Alsace uses about 330,000 pounds a year, representing 87,500,000 eggs, or the product of 250,000 hens.

The Bohemian and Moravian albumen houses have, besides the places where they carry on their manufacture, establishments in many other towns where eggs are broken daily and the yolks retailed for kitchen purposes. In this way the very best price is obtained for the yolks, which are turned to good account. The white of the eggs is collected and transported to the required manufactory for further use. As fresh eggs can only be procured in spring and summer, albumen manufacturers who wish to make during the year must lay in stores of eggs. To preserve these stores from injury, the following process is necessary: The eggs are packed in wicker baskets, bricked up in pits, which are filled in with lime water. These pits are covered with planks and protected in winter from the frost by heaps of straw and manure. In this way the eggs are kept fresh and uninjured for the object in view.

The high price of egg albumen and the evils attending its use led, soon after its introduction, to an effort to replace it by a cheaper and more suitable medium, and many materials have been experimentally tried for this purpose, but hitherto without superseding the use of egg albumen. Animal caseine and vegetable gluten were at first principally recommended as a successful substitute for albumen, but these two bodies and many other proposed substitutes have failed to prove their durability. They even lack the properties peculiar to albumen alone, and essential to their employment as thickening mediums. Thirty years ago the Industrial Society of Mulhouse offered a prize of £400 for the discovery of a material or process for replacing albumen in this respect in calico-printing, but hitherto no one has been found to whom this prize could be awarded. Z. Leuchs, of Nuremberg, proposed, indeed, to utilize the immense quantities of roes of fishes caught in Norway and Sweden, which contain a considerable percentage of animal albumen. His proposal, however, met only with a *succes d'estime*, for A. Dollfus, who went to Norway at the instance of the Society to make experiments on the spot, as to how far these roes could be employed for the manufacture of albumen, gave it as his opinion that this preparation could not be practically carried out, as the albumen obtained was totally unfit for printing purposes. It resulted, in spite of numerous experiments, in the impossibility of preparing albumen free from the skin-like egg-shells of the spawn. Leuchs was, indeed, rewarded for his idea with the Society's gold medal, but the high prize remains still to be awarded.

The yolks of eggs are in great demand for dressing the skins in glove-making and calf-kid leather. Messrs. Dent, at Worcester, use up a large quantity.

According to M. A. Mosselman, yolk of egg may be preserved for some time without losing its clearness or color, and without acquiring any smell, by adding to it five per cent of neutral sulphate of soda, either in a powder or concentrated solution. At his establishment at Carentan (Manche) France, M. Mosselman prepares a preserved mucilage for the use of leather dressers, skin dyers and others; it is limpid, of a fine color, and has no odor. It was awarded a silver medal by the Society of Industry of Mulhouse some thirty years ago.

An albumen manufacturer in Krakau, Austria, sells yolk solid at 8d. per pound and received for this a prize medal at the Vienna Exhibition in 1872.

An egg oil is obtained in Russia in large quantities and of various qualities; the best so fine as to far excel olive oil for cooking purposes. The less pure and very yellow qualities are chiefly used in the manufacture of the celebrated Kazan soap. Both of these products were shown at the London International Exhibition in 1862 and at subsequent exhibitions. Neither the oil for cooking purposes nor the soap are sufficiently cheap for general use; they are consumed only by the wealthy classes as luxuries, the soap, being regarded chiefly in the light of a cosmetic, is a much-valued addition to a Russian lady's toilet necessaries.

The yolk is also used for medicinal purposes. It was used in the Middle Ages for the painter's art before the discovery of oil colors, as in the Chapter-house at Westminster.

[1] From a paper by P. L. Simmonds, F. L. S., read before the Society of Arts, December 7, 1887.

ELECTRIC RAILROADS IN THIS COUNTRY. — The *Electric Age*, in its forthcoming issue, will say: "Contrary to the general impression that there is only an electric railroad here and there, an examination of electrical-railroad statistics shows that there are already 130 miles of road in operation on this continent. Of this number, 21 miles are in operation in Pennsylvania, 16 miles in New York, 10 miles in Ohio, and 83 miles in New Jersey, Maryland, Colorado, Michigan, Missouri, California, Alabama, Virginia, Kansas; Delaware, Rhode Island, and Ontario combined. Almost all of this building has been done in the past year. There are in course of construction, or contracted for, 150 additional miles in the States of New York, Massachusetts, Connecticut, Tennessee, Ohio, California, Pennsylvania, Nebraska, Kentucky, and Minnesota. On these various roads, constructed and constructing, in 62 different towns and cities, the Van Doepoele system is used, or to be used in 17 cases, the Daft system in 15 cases, the Sprague system in 7 cases, and the Bentley-Knight, the Heart, the Henry, the Julien, and other systems in the remaining cases. The last-named system is to be used on the projected New York and Harlem Fourth Avenue Electrical Railroad, while the Daft system is in use at Los Angeles, where the first electrical railroad was opened for business in the winter of 1886–7."

THE ILLUSTRATIONS

[*Contributors are requested to send with their drawings full and adequate descriptions of the buildings, including a statement of cost.*]

HOUSE ON HEREFORD STREET, BOSTON, MASS. MESSRS. SHAW & HUNNEWELL, ARCHITECTS, BOSTON, MASS.

[Helio-chrome, issued only with the Imperial Edition.]

GOTHIC SPIRES AND TOWERS. PLATES 13, 14 AND 15, ST. PETER'S, KETTERING; ST. ANDREW'S, BACKWELL; ST. MARY THE VIRGIN, FAIRFORD; ST. FUNBARRAS, FOWEY; ST. PROBUS AND ST. GRACE, PROBUS, ENGLAND.

[Issued only with the Imperial Edition.]

COMPETITIVE DESIGN FOR THE INDIANA SOLDIERS' AND SAILORS' MONUMENT. MR. S. S. BEMAN, ARCHITECT, CHICAGO, ILL.

COMPETITIVE DESIGN FOR THE INDIANA SOLDIERS' AND SAILORS' MONUMENT. MESSRS. WAITT & CUTTER, ARCHITECTS, BOSTON, MASS.

COMPETITIVE DESIGN FOR THE INDIANA SOLDIERS' AND SAILORS' MONUMENT. MR. GLENN BROWN, ARCHITECT, WASHINGTON, D. C.

HOUSE AT MORRISTOWN, N. J. MR. BRUCE PRICE, ARCHITECT, NEW YORK, N. Y.

LUTHERAN CHURCH, LOS ANGELES, CAL. MR. ERNEST A. COXHEAD, ARCHITECT, LOS ANGELES, CAL.

THE OLD AND THE NEW.

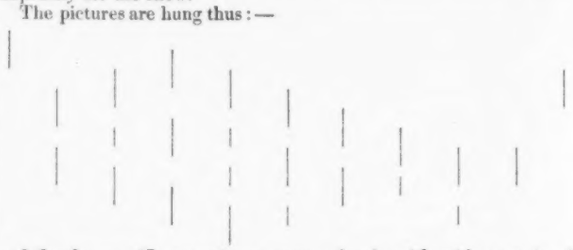
IT is a pity that the "Old" Water-Color Society has given place to the "Royal" Society, for the former title is far more appropriate to the contents of the gallery. If a Rip Van Winkle took a walk round the rooms, he would find the same subjects on the walls, the same names in the catalogue, the same intense respectability as — I was going to say, fifty — I certainly can say truly five and twenty years ago. Sir John Gilbert, Mr. Birket Foster, Mr. Carl Haag, Mr. Frederick Taylor and many more, continue to turn out pictures no better, no worse (or very little worse) than they did years and years ago. And how comes it that they see nothing new in Nature? Mr. Haag, for instance; does he trip off to Cairo every year? And if so, how comes it that he always sees life there under exactly the same conditions and with exactly the same effects? Why, too, is Sir John Gilbert eternally giving us "After the Battle?" One wearies of the Pall Mall conventionalities and one longs to find Miss Montalba painting the North Pole, Mrs. Allingham the Highlands and Mr. Richardson anything but the Italian Lakes.

Still, even novelty has its drawbacks and such innovations as the works of Messrs. Emslie and Henshall — the one a stupidly vulgar pun illustration, "Shakespeare or Bacon," and the other, an equally stupid and far more vulgar series of four pictures, called "Married" — are less to be desired in the rooms of a highly respectable society of painters than they would be even in the pages of the *Graphic*. Mr. Henshall knows the British public, for he carefully "reserves his copyright." Wise man! his pictures will doubtless be immortalized as Christmas chromos.

But it must not be thought that the exhibition is void of interest; it would be worth a visit if only to see the work of one of its newest associates, Mr. Arthur Melville, whose "Snake Charmers" and "Waiting an Audience with the Pasha," are excellent studies of color and draughtsmanship. Firmly drawn and solidly painted, these pictures form a fine contrast to Mr. Haag's questionable Eastern effects and Mr. Holman Hunt's "Sleeping City." The latter is intended to be a study of sunlight, but it is only a *mêlée* of yellows, reds and purples.

If the Water-Color Society's Exhibition is a mass of conventionality, the same charge cannot be brought against Mr. Menpes's Japanese drawings and sketches. Entering from the damp dinginess of Bond Street, one finds oneself in a room, the very air of which has a peculiar concentrated Japanese odor of some indescribable something. The walls are hung with a sort of mauve or peach-blossom colored drapery; the floor is covered with some queer, rough buff material, and the only couch is of the same color. A Japanese girl sells catalogues seated upon, not a Japanese seat, *i. e.*, the floor, but upon a very English cane chair. This is so out of harmony with the surroundings that we wonder it escaped the notice of the decorator, for even the visitors on the private view day put themselves into "harmonies" to suit the pictures, Mrs. Oscar Wilde, we are gravely told, wearing a dress and hat trimmed with almond blossoms, made expressly for the show.

The pictures are hung thus: —



and the frames (Japanese) are narrow beads with wide mounts of several tones of gold and silver. This is meant to enhance the beauty of the sketches — in reality, it destroys them. The pictures are not placed in the centre of the frame — a common practice in France, though new to London. Mr. Menpes's work is essentially impressionist, and, inasmuch as the pictures are very small, herein lies his mistake. A picture ought to look well on a wall when one is sitting some distance off, but these sketches appear, at two yards' distance, to be a series of gold mounts with a spot or two of weak color dropped onto them. Granted that a picture should merely be a few strokes of color when one looks into it, I imagine it ought to fall into some shape at a sufficient distance. This is the case with the merest smudges of Manet, Besnard, Raffaëlli and their friends, but Mr. Menpes's sketches are only, at a little distance, impressions of impressions, and his system of sticking a drawing up here and there, all alone and out of sight, prevents one studying it as one would wish to do.

The catalogue resembles the "analytical books of the concert," giving notes and descriptions of the works. Here are a few examples: "'Three Little Maids from School,' three dancing girls, etc.; they always color their lips an intense red or dark bronze [one need not go to Japan to see colored lips]; 'A Tea Sale,' tea is being sold at the shop, which is adorned with red and white lanterns; 'Evening after Rain,' the sun is setting; 'A Street,' a comparatively quiet street; 'A Blonde Day,' this might almost be a Greek street and Greek girls walking in it; 'The Scarlet Umbrella,' a market-place with umbrellas; 'Chuns,' there is something very Greek about the bearing of Japanese children.'" Where Mr. Menpes sees a Greek character about the Japanese one is at a loss to discover. Surely nothing can be so unlike as the graceful down-flowing drapery of a Greek marble and the tightly-bound round garments of a Japanese girl. The legs of Greek women were free to move; those of a Japanese are bound together so tightly that she is only able to shuffle.

But when one has got over all these affectations, when one's eyes are clear of the dust that Mr. Menpes tries to throw into them, when one has got over the disappointment entailed by discovering that the artist has looked at Japan through native spectacles instead of with his own European eyes — then there is much to enjoy in his work. It is fresh and crisp and true in a sense — wanting, perhaps in light and air and certainly in color, for Mr. Menpes is no colorist. There are plenty of colors, but no color — as the French say, "*beaucoup colorié, mais pas de couleur.*" Japan cannot be as gray as this and why should shadows under a hot sun be so much less strong in Japan than elsewhere? Compare light and shade as painted by De Nittis or Montenard with these sketches. A charming little picture described by Mr. Menpes as "Here we have the Vivid Pictures, etc.," is to my eyes a harmonious mass of grays. Some of the little scraps of tea-gardens and streets are delicious in tone, and the way in which the painter jots in his figures is most clever. Let me commend the garments of the "Misses Pink, Lilac-Blossom, Crocus and Lavender," but the same praise cannot be bestowed upon the 'Lemon Bridge.' The blue of the water becomes intense as the afternoon wears on." The blue of the paint, perhaps, but no one would dream of its being meant for water, except from the fact that a bridge is above it.

Surely Mr. Menpes cannot be serious when he speaks of his etchings. "Every proof is printed by myself. I am convinced that the etcher, and the etcher alone, can bring to the delicate process of printing the necessary tenderness and sympathy of workmanship which gave, in a less busy and a less mechanical age an artistic individuality to each proof." That the "artistic individuality" may have been apparent in the etchings of former days, those happy, idle, unmechanical ages long since past, is possible, but in spite of the artist's "sympathy of workmanship," I fail to see much "tenderness" in these specimens of his "delicate printing."

In an adjoining room are several so-called pictures by Mr. William Stoll, of Oldham. Never let it be forgotten that this particular Mr. William Stoll, this Stoll of the great family of Stolls, is of Oldham. So he signs his works, and posterity will be thankful.

PENGUIN.

JOTTINGS ABOUT THE UNITED STATES.

A YOUNG Englishman sends the following report to the Architectural Association:

Since writing my last lot of "Jottings about Paris," there has been time enough to do much and to travel far, and that is about what I have done, having travelled over seven thousand miles. On the 30th of August, about 4 P. M., I stepped off the tender and on the good ship "*Bothnia*," which was to be my home for more than a week. We started about 6 P. M. in a drenching rain and stopped at Queenstown next day. Weather decidedly nasty, and I, with most of the other people, did not feel like making a hearty meal. It is a great joke at Queenstown to see the way the natives — mostly girls — surround the steamer in all sorts of boats, and scramble or get hauled up the side to sell their bog-oak sticks and ornaments, laces, fruit, etc. And still more funny to see the scurry to depart when the screw starts and the ship begins to carry them towards their much-loved America. Their task in escaping is not rendered more easy by the action of the crew, who energetically — very — help them over the sides as soon as the ship begins to move. Next day I was well and *how* hungry, and I had thenceforward what the Yankees call a "real good time" until we reached Boston on the night of Friday, September 9th. And this, despite the discomfort of a week's bad weather from the time we started — bad enough to make us a day and a half late in arriving. The last three or four days were, however, splendid, and life *is* worth living on a good steamer in fine weather, I can assure you.

We had to wait outside Boston Harbor for the next morning's tide, and finally got landed at the pier, passed the Customs officers, and away to hotel soon after 10 A. M. I spent a week in Boston. The old part of the town is very irregular, but has some remarkably fine buildings. The streets, however, and also the footpaths — or sidewalks, as they are called — are most vilely paved, and are very dirty if the weather is at all wet, which it was several days whilst I was there. This remark as to paving applies to most of the towns I have visited, New York being as bad as any. The Yanks are very fond of telling us where we are behind, but I think in this matter we can show them a very good lead. And what makes the matter worse is that nearly every street has car-tracks in it, the rails of which are not almost flush, like the ones we use, but many are just like a railway line, and so have a deep rut each side of the iron. Others are flush one side, but the grooved rail we use does not seem to be used anywhere here. One reason for this is that the heavy snow and severe frost chokes them up, I am told. In fact, this question of the weather enters very largely indeed into all matters here. It partially accounts for the wretched state of the paving, I am assured, as after several moist days, the mercury suddenly drops a few points below zero, and you can guess the effect on anything that can be moved or lifted by frost. Wood and asphalt have been tried, I believe, but the ordinary granite paving has had again to be resorted to on account of the ease with which it can be repaired. If the streets *were* carefully repaired, well and good, but it seems to me they are not.

The climate naturally affects the arrangement of the buildings, and here the States certainly are far in advance of us. Houses, blocks of offices, and buildings of all kinds, have all the halls and corridors heated, either by hot air from furnaces in the basement, or by coils of steam-pipe, this steam being supplied in New York by a company, and laid on to the houses and offices just like gas or water. My office here, like a good many others, is warmed in this way; there is no mess and bother in keeping a fire going, but a nice temperature which I can regulate to please myself. And if I go out into the corridor, I do not get my nose nearly bitten off, or if some one opens the door I am not nearly blown off my chair — both for the simple reason that the hall and corridors are about the same temperature as the rooms opening on them. Attend to this, ye builders of houses, where draughts are the principal feature!

Another point for our architects. All the rooms in the houses here, with scarcely an exception, have one or more large closets to them — planned with the house — and no one who has ever felt the advantage of this would cease to bully and condemn our — usually — cupboardless houses. For instance, if the room is a fairly large one, it has two closets, one of which contains the toilet requisites and the other one's wardrobe. You fit up your room as a sitting-room and have a bed which folds up and looks exactly like a sideboard, your chest of drawers and dressing-table combined having a marble top and large mirror, which can be nicely hung with scarfs or little curtains, whilst knick-knacks can be artistically distributed over the said marble top and also on the mantel shelf, and there you have, until such time as you retire, quite a drawing-room.

A very objectionable, but very common feature here, however, is to make the house deeper from back to front, and put another room in the centre, approached and connected by sliding glass doors with either the front or back room, through which it gets its only light and air. The great majority of the people here do not keep a house of their own, but live in boarding-houses, and this unhealthy arrangement gives an extra room for letting on each floor, you see, which helps the proprietor or proprietress to pay the enormous rental of the house. Flats, too, are very numerous.

But somebody will be asking, What has all this general description to do with architecture? or even with the "allied arts"? Not much, perhaps — that is, with architecture as a fine art — but this will also be the case, I fear, with all I may write. Nevertheless, some practical hints may be gathered from what, after all, are merely the jotted down *impressions* of a roamer in this land of dollars. To return, therefore, to Boston. The first thing that strikes one is the enormous quantity of marble used — almost always white — whole outsides of large buildings being of it, as well as the steps and stairs, floors, balustrades, dados, and wall-linings, often the ceilings — in iron frames — etc. Marble, marble everywhere in fact. The outsides of good buildings, if not of marble, are of granite, a very fine-grained sort, of a nice light gray color. The buildings are more striking from their size, evident importance, and the equally evident lavish expenditure on them, than for their artistic merit. They are usually the storied arrangements of the orders and the stuck-on-looking column and pilaster arrangement, of which one has seen so much and got so tired.

I need hardly say that this does not apply to the works of the late Mr. H. H. Richardson, of which Boston and its neighborhood contain some fine examples, the chief being his Trinity Church, which has cost £125,000. Illustrations of this and other works were exhibited in the R. I. B. A. room when Mr. Richardson was elected a Corresponding Member. He died, I believe, before the notification of this election reached him. Other works of his I noticed were a corner shop, with offices over, in the town (disgracefully disfigured, by the way, with hideous sign-boards), and the Law School, forming part of Harvard College at Cambridge. Some friends, whose acquaintance I made on the steamer, and who exhibited, in a marked degree, that hospitality for which our American cousins are famous, one day drove me to the residence of the late Mr. Richardson, at Brookline, and introduced me to one of the firm now carrying on the business, Mr. Coolidge, who most courteously showed us through the offices attached to the house and into his late patron's study — a charming room with *such* books carefully stacked around it — something to make a student's mouth water. The office is divided up into a number of "pens," so that each pupil or assistant has, so to speak, a room to himself, and he is held responsible for the good order of everything in it, and is, when therein, monarch of all he surveys. These "pens" are, of course, arranged along the walls, each having a window, and a central corridor runs down the room between them.

Other buildings in Boston worthy of note are the Post-office, City-hall, and some fine "blocks" erected by different insurance and other corporations. Also, the Vendome and other hotels, and many private residences on or near Commonwealth Avenue. This splendid street runs right through the new and fashionable part of the town, which the sea used to cover, and is two hundred and fifty feet wide, with a continuous park a mile and a half long in its centre. . . .

Let us, however, get on to Chicago. What a marvellous place that is! Think of it. Forty years ago there was only a small Indian trading-post on the plain where now stands a vast city. In 1843 the population was but 7,000. In 1850 it had grown to 29,000, and in 1860 to 110,000, whilst now the population is something like 500,000. And this, despite the great fire of October, 1871, which destroyed practically the whole of the business part of the town, and involved a loss of some $200,000,000 or £40,000,000. One of its leading papers, speaking of the wonderfully rapid reconstruction of the city, said: "We know no words which will better convey to persons outside Chicago an idea of what has been done by way of rebuilding the city than to say that, beginning on April 15th and ending December 1st, 1872, excluding Sundays, counting two hundred working days of eight hours each, there will be completed one brick, stone or iron building twenty-five feet front, and from four to six stories high, for *each hour of that time*. The extraordinary achievement in rebuilding Chicago is not confined to the number of new buildings, but applies equally to their size and superiority in construction and materials." And so it does. I have seen nowhere, either in this or our own country, or on the Continent, such a truly noble lot of buildings as Chicago possesses, and buildings at the same time so original in treatment. There is an almost total lack of the conventional stuck-on-looking column and pilaster treatment. There they stand, what you see carrying them, with little ornament, but that little good, a credit to their designers and constructors, and to the enterprising citizens who laid out their money in allowing these "to design in beauty" and massiveness and "to build in truth." I have made a collection of photographs, which I will try to find time to arrange and send our Secretaries, so that if they can manage to exhibit them in our rooms, readers (if there be any) of these jottings may see for themselves whether my delight is strained. Don't forget to count up the stories in the buildings so as to get *some* idea of their size. I say "some" because without seeing them I doubt very much if any one could realize how large they are, and hence, even the photos give a somewhat poor idea of what I am talking about.

After spending some time in Chicago, I went to Kansas City, a quite new and quickly-growing town some five hundred miles to the southwest of the first-named. Starting at mid-day, the express lands you in Kansas City at nine the next morning. As you feel after taking the first mouthful of a tough steak — that you don't want any more of it — so I feel with regard to Kansas City and the "Wild West." It rained almost incessantly the first two days I was there, and the mud was knee deep. The natives wear boots up to their thighs, but I was not so provided, and suffered accordingly. The whole town is on clay, on the banks of the wide, but dirty-looking Missouri. Missouri mud, in fact, is becoming proverbial. Kansas City has been laid out and so quickly built that no time was left for "grading" the roads. Consequently, as the site is very hilly, while standing at a four cross ways, you can see in each direction the cable-cars (no others could mount some of the hills) bobbing up and down just like the cars on the switch-back railway at the late Exhibition. On my return journey I went to the railway-station—depôt they say here — on a cable car, and the descent was so steep that, as I was facing the way we were going, it was only by holding on with my hands that I was able to keep my seat, and even then we were landed on a high wooden viaduct, the street, on which stood the station, being several flights of stairs below. "Grading" has now been commenced on several of the streets. Rather nice to have your house left some twenty feet above the road, eh? I saw several thus left. Only the few principal streets are paved, the paving being of wood blocks more or less round — small trees simply sawn through in chunks about three or four inches thick. In the other streets, carts, etc., sink their wheels to the axles, and people on foot can only cross just here and there where plank walks are laid from side to side. Planks, too, form the walkable portion—where they are walkable—of most of the sidewalks.

There are some very fine buildings going up in the town, mostly the work of Chicago or Eastern architects. The local men do not apparently inspire confidence, or else it is known that they lack the talent. You see any number of cowboys — just off their ranches for holiday or business — not the neat and clean-looking articles of Mr. Cody's show, but the real thing. Tall, well-built, splendid specimens of humanity, brown as a berry, and looking very picturesque in their wide-brimmed buff-felt hats and high boots, generally covered with mud to the knees. These Western cities may be the places, as a large hotel proprietor expressed it, to "pile up the scheckels," but after London, Paris, and, as far as I know, New York also, there is a roughness and want of niceness and politeness about the place and people that jars very considerably on a — more or less — civilized person. One object, and one only, seems to rule — to make money. For my part, I would rather make less and stay in the East. On the cars — that is American for "in the train" — going to Kansas City I got intimate with a young fellow who had just left Harvard College, every inch a gentleman. He had decided, or his friends, perhaps, had decided for him, to "go West" and make a fortune. I shall never forget his woe-begone looks as we went round the half-built city. When I last heard from him he was a booking-office clerk, working from 8 A. M. to 6 P. M., Sundays included. He will, perhaps, become a rich man, but when he looks back at what he has gone through will probably ask himself, Is it worth it? C. H. B.

SOME LETTERS OF VIOLLET-LE-DUC'S.[1]

Castle Oydonck near Ghent

M. VIOLLET-LE-DUC *fils* intends shortly to publish the voluminous correspondence of his father, from 1835 to the year of his death, which will include letters written by their author while abroad, often illustrated with sketches, grave or grotesque, hit off on the spur of the moment. The work will, doubtless, possess a value and charm of its own both from a biographical and artistic point of view. Since I met the editor in Paris, he has greatly favored me by placing at my disposal six of the forthcoming letters, two of which, from their brevity and worth, I will trespass for a few moments longer on your time by reading. The first is dated August 23, 1869, and is addressed to M. Paul Bœswillwald, then a young architect completing his studies in Italy. I think it will be admitted that no sounder advice in so few words could be given to a student:—

"*Mon jeune Confrère et Ami,*—I received your letter from Florence yesterday, and I thank you for all the details it gives of your travels and of your impressions as an artist. One ought to view objects without prepossessions, and without disturbing influences: that is the essential point; and I perceive that you have examined matters so as to turn everything to good account. The Greek art is certainly the only architecture which leaves an impression free from all extraneous elements. Since, however, you are passing the winter in Rome, notice well the edifices of the Empire, not as an artist, but as an engineer, as a practical man, and you will observe how comprehensive is the plan of these monuments, how it was possible to raise them rapidly and with simple means. The Romans, who are represented as ostentatious to excess, in the books written by literary archæologists, were the most economical of all builders; but this economy is very intelligent, and never descends to meanness. If at Rome you have the courage to disregard the Roman decoration — which, in spite of its richness, is not worth much — in order to occupy yourself with the mechanism of the Roman structure, in order to examine how it was possible to obtain so great results with such simple and inexpensive means, your time will be well spent. At Rome we see such a multitude of things, and many of them so interesting, that we are everywhere easily tempted to appropriate, to make numberless notes and sketches, without due connection and without a dominating idea. When you return home you will perceive that all that is useless, and that labor concentrated on one of the dozen subjects you have glanced at would have been of great interest and real value. Therefore, my dear friend, see a little of everything, but try to utilize your stay in the great city of the dead by extracting something from it definite and limited. Above all, beware of the influence of the manner of living and studying adopted at the Villa Medici. It is seductive and very pleasant, renders all work easy and agreeable, but when the cheerful days of comradeship have passed away, and one faces the reality, one sees that there is very little left at the bottom of the bag. Endeavor to draw from your own resources a subject to treat of there, and, devoting yourself to this object, whatever it may be, do not allow yourself to be diverted from it. I know by experience that this is difficult, for at Rome one is like a man with a good appetite in presence of twenty tempting dishes; he would much like to eat them all, but, not being able to do so, he tastes them one after the other, and he finds at last that he has not dined.

"I perceive that you have taken a rapid run over the environs of Rome, where there are, in fact, more objects of interest than in the city itself, where this age of ostentation has done so much to spoil everything. You must well observe the small towns of the district, and Viterbo, Civita Castellane and Villetri. There are many striking things to be found there of the mediæval period, still uninjured. You must visit the outskirts of Rome, so full of interesting ruins; and the winter is favorable for these excursions. But what is really worth studying well is the Roman structure, and that has never been methodically done. You must begin with the Republic and Etruria, and the monuments of Magna Græcia, and follow them down to the Empire. You will find there a mine of curious and practical observations of veritable interest.

"I thank you sincerely, my friend, for your kind remembrance and the compliments you have sent me with regard to the *cordon rouge.* [M. Viollet-le-Duc had just been made a Commander of the Legion of Honor.] If you think you will require any information, do not fail to ask me for it. — *Tout à vous.*"

The second letter is written in quite another key, by a man who was one of the last to wear his heart upon his sleeve, but here we find it laid bare in sorrow for his country and in the warmth of his friendships. It bears date February 23, 1871, and is addressed to M. Révoil, author of "*l'Histoire de l'Architecture Romane dans le midi de la France*":

"*Pour moi, mon cher ami,* I have met with no casualty during my days and nights before the enemy, but unfortunately, I have seen many of my brave comrades fall around me. My son has also escaped injury, but his child has died, like so many others, from privations which have been imposed upon us all. I pity you sincerely, my dear friend, and there is no consolation to offer you. [M. Révoil had just lost his wife.] It is not in middle life that one meets again with unalloyed affection, if one has had the good fortune to find it — a rare thing. We must give ourselves up, however, to our now so afflicted country, and no one has a right to withdraw himself from the duties it imposes on him, whatever his family afflictions may be. We must all be convinced of this if we wish that our France should rise again; no personal feelings should make any one become a defaulter.

"We are still shut in here, not being able to communicate with those outside without the permission of *ces Messieurs.* As for me, I keep to my post. We have had a hard time of it; but the population of Paris has risen above all I dared hoped. Ah! if we had had some military chiefs! But of what use are these regrets? We must restore our country, cost what it may; and it is necessary that all good citizens should rigorously set to work. Gasnier has taken refuge at my house, his residence at Suresnes being in the hands of the enemy. He has been there since the investment. Many of our friends are I know not where; several left Paris before the siege; of others I know nothing. Many artists have been killed, for in this war it is principally men of intelligence who have devoted themselves to the good cause; the noisy, base and cowardly *canaille* have lost credit in the minds of those simpletons who used to call them — the People. Let us hope that we shall gain a little experience and profit by this grievous lesson. Let us hope that we shall begin to reflect, to know how to conduct ourselves, and to disregard bad and incapable men; but what a work there still remains to do!

[1] From a paper by Charles Wethered, M. R. C. S., read before the Royal Institute of British Architects.

"Leaving Paris on the 18th of September, with my auxiliary corps of engineers, I did not enter it till the 27th of January. Wounded in mind and bleeding in heart, I set to work to forget, if possible. I see no one; besides, Paris is not what you have seen it, it is the shadow of itself. What more can be done? I am working, trying to make the future profit by the lesson, for I do not consider myself as discharged from duties. Do the same yourself, in spite of your too well-founded grief: work is the only consoler. — *Donnez-moi de vos nouvelles et croyez-moi bien à vous.*"

Among his lesser plans for the future, he had partly arranged an excursion with us to the Orkney Islands, to examine their rocks and correlate them with those of Switzerland; and also to sketch scenery that had impressed his imagination ever since reading Sir Walter Scott's romance of "*The Pirate*," when a boy of eleven. This *ultima thule* of our cherished hopes it was decreed should never be reached. Viollet-le-Duc died suddenly of apoplexy, at Lausanne, in September, 1879, before completing his sixty-sixth year. He had no warning that his race was run: all was reft at once. A fortnight before, he had said that, humanly speaking, he hoped to live twenty years longer — ten more for work and ten for rest. Only the day before he was struck down, he verified some geodesical observations he had recently made in the mountains, and gave the finishing touch to the last of his beautiful *aquarelles*. A few evenings earlier, for the first time in his life, this valiant worker was heard to say, "*Je suis fatigué.*" He died in the full strength of all his powers, whilst doing the State and mankind much service. Sovereigns and learned societies beyond France had bestowed honors upon Eugène Emmanuel Viollet-le-Duc; from this Institute, he received the Queen's Gold Medal, and from our Royal Academy of Arts, the diploma of Honorary Foreign Academician. These distinctions were valued by him at their true worth, from the motives that prompted the giving; beyond that, no man cared less than he for adventitious honors. Free from all trace of vanity or egotism, averse to every kind of personal display, he was quite content with the "golden mediocrity of his fortune" won by his own labors.

BOOKS AND PAPERS

THIS[1] is an admirable work; it is written with the enthusiasm which is quite justified by the interest of the subject, and at the same time with a tempered sobriety of tone which maintains the reader's respect for the enthusiasm as never going astray into vagueness and extravagance. Those who are aware of the extent of the services of Miss Stokes to the antiquities of Christian Ireland may be a little discontented at her self-effacement. All obligations to other writers are frankly and gracefully noted, but it is only to herself that she is parsimonious of acknowledgment. It is well that those who are charmed by her lucid exposition and perspicuous style of writing should know also how much they owe to her accomplishment as an artist in reproducing with most conscientious exactness the intricate and elaborate designs which are the greatest achievements of the genius of Ireland in its earliest Christian period.

The last chapter of the work treats of "Building and Architecture." Starting from cromlechs, dolmens and kistnæns we come to stone-forts or dunes, of which the walls and doorways have the appearance of primæval construction upon which that of Mycenæ was only an advance as carried out with command of greater resources. Then follow the monastic cells built on the beehive principle of the so-called treasury of Atreus, though without the covering of earth. Stone churches grouted or with cement succeed, then arches false and true, jambs and imposts with chamfered edges and roofs, sometimes of shingles and sometimes of solid stone.

There is no longer any mystery as to the nature or origin of the Irish round towers; they are not pagan but Christian erections — in fact, ecclesiastical bell-houses. Dr. Petrie and the late Lord Dunraven made complete examinations of them, and followed the traces of the builders of them across the Continent to the group of their most remarkable prototypes at Ravenna. "Only the oldest and simplest type of such belfries ever reached Ireland and Scotland, and their singularity does not consist in their form, but in their isolation. The round tower with conical top was a common form in the earliest periods of Christian architecture — when a watch-tower and keep for the monastery became necessary, when war and rapine called forth the symbol of pride and power in Irish Christian architecture, the lofty stronghold, bearing its cross on high, was erected in the cemetery and opposite the doorway of the church." There are sufficient remains to prove that a round-arched Romanesque style even considerably ornamented had been introduced into Ireland before the eleventh century, and contrasting in certain respects with the Norman variety that came in later. In these remains the chevron ornament is prevalent and varied, and instances of fret, scroll and animal combinations are not infrequent; but it is not in architecture but in illumination and metal-work that we are to look for the exquisite developments of Irish taste and ingenuity.

The art of illumination was the first in date and most perfect in result. The "*Book of Kells*," now at Trinity College, Dublin, dates as early as A. D. 650–690, and marks a time when the art had attained its highest excellence. It is the earliest preserved of the monuments, including metal-work, crosses and croziers which include in their ornaments the so-called trumpet pattern or divergent spiral design. The latest is a tombstone dated A. D. 1085 in the valuable chronological list at the end of the volume. Intermediately it is seldom missing. Two lines starting from a central spiral diverge and open out like the mouth of a trumpet, then converge again and whirl to a new centre to leave it again and repeat the same figure. As regards these islands this is a true Celtic ornament; it occurs in connection with enamel in British works which are earlier than the Roman occupation. It is found susceptible of considerable variation. On some Celtic shields of brass in the British Museum, it assumes elongated forms in graduated relief of great elegance.

The illuminator of the "*Book of Kells*" seems to delight in exhibiting it in endless development. Sometimes we see a plain spiral as if of a single wire, then the centre of the spiral is occupied now by a double, now by a triple rounded return, and these sometimes end in a bird's head; sometimes the spirals are paired like Ionic volutes of equal size and sometimes unequally. This ornament has a peculiar interest in reference to architecture, which becomes especially salient upon observation of its metallic forms. It vanishes in Britain under the Romans, it disappears in Ireland as in England almost absolutely in the period of round-arched Romanesque architecture, but the predilection for the form reasserts itself later, and is the true suggestion of the treatment of bosses and foliage in the early English style of architecture. Trefoils and quatrefoils are returned upon themselves with a tendency to bulbous terminations, and when the leaf character is more decided, there is a leaning to a knobbed or lobelike elevation within its margin which at once recalls the characteristic treatment of the raised Celtic spirals. Many of the combinations in the Irish designs are identical with some of those which have been brought to light from the graves on the acropolis of Mycenæ, and many others appear to be only fanciful variations from certain others of the same origin.

It would, however, be fallacious to infer any ethnological connection as concerned in the matter. Certain simple combinations of spirals as of straight lines are the obvious resources of early art for giving a degree of variety to plain surfaces. The cable, the fret and the zigzag, the square, oblong, diamond, cross and knot, are common stock and property of Indian, Mexican, Pacific islander, islander of Greek Archipelago, Egyptian, Assyrian and Esquimau. The peculiarity of the Irish artist is first the great variety which he introduced into the treatment of these common materials, and then, moreover, of those more special kinds of ornament which were gathered by him or followed him from the different tribes of the Continent into that island which was still more secluded from original contact with the rest of the world than even Britain in its proverbial remoteness; and, lastly, in the marvellous skill and taste with which he could combine specimens of all these in the elaborate enrichment of a single initial letter or a far more comprehensive monogram.

The simplest elements of these combinations are plain lines disposed symmetrically as in angular frets, or in more or less complicated knots, filling spaces of various forms, or following on in a band which varies in breadth. Then, by an advance in complication some animal form is introduced winding and entangled among the knots, a snake or some exaggerated elongated quadruped, with limbs strangely contorted. Again, human heads appear, and by attention it is usually possible to trace arms and legs also, but in very unexpected positions. Sometimes a serpentine or lacertine figure is combined with a human figure all intertwined in a maze of interlacing cords. We observe here something akin to the stratagem by which the Saracenic ornamentalists combine intricacy with distinctness; it consists in their case in making a strong contrast between the general breadth of the winding bands and some which are suddenly widened out breadths and surfaces. The contrast in the Irish designs is not so extreme, but valuable contrast and definition are obtained by comparative uniformity of the more slender and more multitudinous bands with the more visible, however still limited, graduation in breadth of the bolder member which is allowed at the same time a sweep of more liberal freedom.

The decorators of the Greek vases of very early style are given to exerting their ingenuity in combining a great variety of patterns with a certain degree of symmetry. The effect obtained is very much that of patchwork; detached bits of what form elsewhere continuous simple borders are arranged in bands contrasted in breadth or disposed with certain reference to a centre. These are the simplest efforts of obtaining the charm of variety without quite forfeiting a general sense of unity and interconnection which are traceable in the patterns wrought by American Indians, and in the carved oars and weapons of South Sea islanders. The motive is universal in early times and the times which succeed are often indebted to them for enrichments of refined and chastened elegance. But apart from early Irish work we might not have known the full extent to which variety and intricacy could be harmoniously combined in different patterns, and these, again, associated in a manner which defies reduction to any intelligible principle and yet is as satisfactory to artistic feeling as it is interesting to the eye which is detained by it as if by fascination. The Tara brooch, which was picked up by a poor child on the seashore in 1850, is overlaid with no less than seventy-six varieties of designs, all of which exhibit an admirable sense of orna-

[1] "*Early Christian Art in Ireland.*" By Margaret Stokes, with one hundred and six wood-cuts. Chapman & Hall, 1887.

mented beauty and happy fitness for their relative situations: to appreciate their perfect execution a lens of no moderate power is necessary; their character is that of the style which was in vogue during the three or four centuries anterior to 1000 A. D.

The Ardagh chalice, dug up in a potato-bed, must belong to the same period. The taste for a combination of metals in both these beautiful works again reminds of the prehistoric art of Mycenæ — as the bronze swords inlaid with combats and lion hunts in gold. The chalice is composed of gold, silver, bronze, brass, copper and lead. The sceptre of the great statue of Olympian Zeus, by Phidias, was composed of a variety of metals, and there can be no doubt that the chariot of Here, as described by Homer, is only a poetically exaggerated example of a still more ancient taste for ornamentation by direct metallic contrasts:

> She then hastened to harness the golden-filleted horses,
> Here, goddess aweful, daughter of mighty Cronus;
> And to the chariot Hebe applied very quickly the curved wheels,
> Brazen, eight spoked — at the ends of the axletree of iron;
> Golden the felloe of these, indestructible; but outside
> Tires of brass were attached to them close, a marvel to look on;
> And the central revolving naves on either side are of silver;
> And the chariot body with straps of gold and straps of silver
> Was tightened on, and the rims in a curve were brought round double;
> And from it extended a silver pole, and on its forepart
> She bound on a beautiful golden yoke, and the broad breast-straps
> Beautiful, golden, attached; and Here under the yoke led
> The swift-footed horses, astir as she was for strife and warshout.

The chalice, however, was further enriched with enamels by an art which was practised in Gaul and Britain anterior to Roman domination, and unborrowed from either Rome or Greece.

In closing our notice of this work of Miss Stokes, we must once more give expression to our sense of a most unusual combination of antiquarian sympathy with sound judgment and graceful literary skill. W. Watkiss Lloyd.

COMMUNICATIONS

ILLUSTRATIONS OF BOSTON PUBLIC BUILDINGS.

New York City, May 9, 1888.

To the Editors of the American Architect:—

Dear Sirs, — There are many readers of your paper who would be glad to know what you are building or going to build in Boston for your Public Library and your new Court-house. As Boston is the leading architectural city of our land, we are interested in your success in getting what we can only admire and long for.

Yours very truly, Wm. H. Ingersoll.

[The architect of the Suffolk County Court-house has repeatedly informed us that he was unwilling to have the design published in its present form. The Boston Public Library drawings will be published in full within a few weeks. — Eds. American Architect.

AMERICAN *vs.* FRENCH ARCHITECTURAL TRAINING.

New York, May 12, 1888.

To the Editors of the American Architect:—

Dear Sirs, — In Mr. Avery's account of the Architectural League meeting of May 7th, published in your last issue, reference is made to the work of the pupils of three Architectural Schools in this country, and their work as shown to the League is said "not to be compared to that of the famous Paris Ecole des Beaux-Arts for originality in composition, freedom of expression, or cleverness in interpretation." The three schools mentioned are those connected with the Metropolitan Museum, Columbia College and Cornell University. There would also have been an exhibit from the Massachusetts School of Technology, if this school had not recently sent its best drawings to the Glasgow Exhibition. From the Exhibition, it was evident that the course of instruction at Columbia and the Metropolitan Museum followed the model afforded by the Beaux-Arts, and while I have not had the pleasure of seeing a large number of the drawings made at the Paris school, still, judging from what I have seen it struck me that the New York schools did fully as well in the respects above mentioned. Considering that the course at the Museum embraces only six months' work the results are highly creditable, and as far as the work at Columbia is concerned, it seems to me to have a promise of far better results than its famous model, while its present performances equal it save perhaps in a certain scholastic largeness of conception. And why should it not equal it? It is not a difficult matter to follow the course of the Beaux-Arts. Even without the aid of its fine corps of instructors, its splendid quarters and models, and its prize of Rome, it is open to any school to take Rome and Greece (Rome first) and achieve the elegant, monotonous and scholastic results, characteristic of French architecture of to-day. The question is whether it is wise to allow the Beaux-Arts influence to have such an extensive sway among our schools. Do the results warrant the high encomiums heard on all sides? Are washed drawings and a slavish adherence to a debased style sufficient ends for the training of pupils? I can imagine that there is a wide divergence of opinion regarding this, which I hope may find its proper expression. Meanwhile, it is instructive to notice that the Cornell school has made a break. The drawings from this school made an effective contrast to the others at the League meeting. It was evident that the problems of design submitted to the pupils were modern ones, and that the tendency was against the Beaux-Art's influence. As might be expected the designs were suggestive of modern architects' work, particularly H. H. Richardson. Mr. E. H. Kendall made a practical suggestion which it is hoped may be heeded, for it would greatly encourage and help the schools if architects should adopt the plan of seeking assistants directly from their graduates. I am yours, etc., F. A. Wright.

NOTES AND CLIPPINGS

Stories of Two Greek Numismatists.— Some forty-four years ago there appeared in London a young Greek gentleman called Timoleon Pericles Blasto. He came to London highly recommended by more than one foreigner of distinction, and thus got permission to study the collection of Greek coins in the British Museum. He very soon proved to the officers in charge of the medal room that he was an accomplished numismatist. His knowledge of coins was great, his devotion to the subject greater; for a whole month he came every day to study the magnificent collection accumulated ever since the time of Payne Knight. His manners were ingenuous, and ladies thought him quite fascinating. At the end of the month, just before he left England, an accidental discovery revealed that a rare Greek coin was missing. Further search disclosed the fact that a large number of the rarest coins had vanished, and had in many cases been replaced by inferior specimens. The authorities of the museum were appalled; but fortunately they lost no time in putting their case in the hands of the ablest detective then known at Scotland Yard, the celebrated Mr. Field. By a dexterous *coup de main* Mr. Field captured in a few hours Timoleon Pericles and all his booty. He was tried at the Old Bailey, pleaded guilty, and convicted. His sentence was seven years' transportation, which of course was commuted on account of his exemplary conduct. He was consigned to the model prison at Pentonville, where he was seen by sympathetic lady visitors reading Sophocles and Euripides in his cell. Before his trial he tried to avert the operation of the law against felons, as it then stood, by conveying all his goods and chattels to a friend on the morning of the day of his conviction. But British law was equal to the occasion. The conveyance of his property was pronounced null and void, because the Court said that there was no such thing as a half or fraction of a day. He was convicted on a given day, therefore the conveyance executed on the morning of the same day was void. Thereupon his coins, as the property of a felon, were forfeit to the Crown, and were handed over to the Treasury; which, after restoring to the British Museum all they claimed, proceeded to invite other claimants to prove their ownership. In due course the residue, consisting of some rare coins, remained in the hands of the Treasury unclaimed, and were ultimately handed over to the British Museum. I will not pursue the career of Timoleon Pericles further, except to say that his memory was honored in the Levant with that of other victims of British law, and that one of his old friends at Smyrna said of him, "Cependant c'etait un charmant garçon." The other distinguished numismatist who has this year rivalled the exploits of Timoleon Pericles, is a Greek whose name I withhold because he will probably be the subject of a criminal prosecution at Paris before long, and also perhaps in Greece. Some time ago it was announced that all the rarest coins in the national collection at Athens had been stolen; and this was followed shortly afterwards by the news that MM. Rollin and Feuardent, the well-known *antiquaires* of Paris, had been robbed of a collection of Greek and Roman gold coins valued at £20,000. The police of Paris soon got on the track, and, swooping down on the culprit found in his lodgings nearly all the coins stolen from MM. Rollin and Feuardent. These on examination proved to be identical with the coins previously stolen from the museum at Athens. It seems that the thief escaped from Athens with his booty, sold it to MM. Rollin and Feuardent, and then, getting into their premises, recaptured it, with a view, probably, of reselling the coins in America. The saddest part of the whole story is that the two keepers of the Athenian Museum, who have always up to this date had a high character for integrity, have in consequence of this mishap "got the sack."— *B. B., in St. James's Gazette.*

Spontaneous Combustion.— The Gage Tool Company, of Vineland, N. J., writes thus to the *American Machinist:*

In 1883 the subject of spontaneous combustion was brought to our attention by the sweepings from the floor of our factory developing an alarming increase in heat when placed in heaps. The floor had been sprinkled and the sweepings were moist. During the afternoon they began to heat, and a thermometer placed in the pile, after it had been disturbed, indicated about 200° F. It being time to close the factory for the night, the sweepings were thrown out. One day during the next year a peculiar odor was noticed in the factory, which increased and became very unpleasant. This was found to emanate from a barrel of shavings and chips from the boring and mortising machines. These shavings and chips are removed from the throats of our plane stocks, which are previously saturated with warm linseed oil. When the cover was removed from the barrel, the fumes were quite strong; the shavings were so hot that the hand could not be held in them without being burned. This barrel was removed to a vacant lot, covered with an oil-cloth, and left. That night, during a heavy storm, the cover was blown off, and the shavings wet. They kept hot a long time but did not char. We then directed the removal from the building of all shavings and sawdust made from oiled wood as soon as made. During one day last

year we had been sawing the oiled plane stocks, and at night, when removing the box under the saw containing the sawdust that had fallen into it during the day, it was noticed to be very hot. It was placed at a safe distance from the buliding, and in the morning the sawdust was burning. A light, misty rain had set in during the night. The fire was extinguished, but the rain continued and increased. Before noon the dust was burning again. During the month of June last we were planing our oiled stocks on a hand (or buzz) planer, and (on June 10th) filled four sugar barrels with the shavings. Water had been spilled on some of the shavings that were put in one of these barrels, and these shavings soon began to heat. A thermometer placed among these shavings indicated a rapidly rising temperature, and at 6 P. M., of the next day the shavings at the top of the barrel began to char. They were then placed outdoors under a wrought-iron boiler bonnet, and covered with a metal plate. The next morning, upon removing the metal plate, we found that the shavings were charred and had shrunk into a cylinder-shaped mass, with a three-inch space between it and the sides of the barrel, making the shrinkage six inches across the top. Upon disturbing the mass it broke into flames. Later in the day sawdust (from oiled beechwood) that had been deposited in a box as it left the saw the day before, began to burn, setting fire to the pine box containing the dust. This box, with the dust, had been placed in an old iron smoke-stack lying upon the ground at a distance from the buildings.

THE LATE PROFESSOR BRUNE'S WORK.—Professor Brune, says R. Phené Spiers in the *R. I. B. A. Journal*, was not only a mathematician of the first class, but also an eminent and a most original artist. He commenced his career in the Ecole Polytechnique, from which school he passed out in the first rank—a position equivalent to a Cambridge wrangler. His artistic preferences, however, inclined him to study for the architectural profession. He accordingly entered the *atelier* of the late Monsieur Questel in 1858, and somewhat astonished that eminent principal by asking him how many years it would take to carry off the *Grand Prix*, that being a prize awarded every year, and for which the whole architectural talent of France is put into competition. As a matter of fact, M. Brune carried off with ease every medal of the school, passed into the first class, and eventually carried off the *Grand Prix* in 1863, that is to say, five years after his admission into the school—being about the shortest period on record, at least in late years. . . . His *Grand Prix* drawings astonished the painter-members of the Institut de France by the marvellous proportioning of the figures in the vault covering the Great Hall in his design, which was for the "staircase of a royal palace." The most remarkable drawings he executed in Rome were those of the Pantheon, which he selected as his measured-drawing subject. Instead of the conventional method of shading, with the shadows projected at 45 degrees, he copied the actual effects of shade as seen in the Pantheon itself; the marble columns were reproduced with a fidelity which would have delighted the heart of Mr. Alma Tadema, R. A. In 1865-66 he visited Egypt, and measured Karnak, Medinet Habou, and other Egyptian temples, which were subsequently published in Mariette Bey's work without any mention being made of their author. On his return to France, in 1866, having some small property of his own, he allowed two or three years to pass without taking up any serious work; but on the death of the Professor of Construction at the Ecole des Beaux-Arts he was persuaded to allow himself to be appointed to the post, and commenced the remarkable *Cours* which has just been published. Later on, he was appointed architect to the Ministry of Agriculture—a new building in the Rue St. Germain now being erected; and his last work was the house of President Grévy on the Trocadéro—a building which, though simple and unpretending on the outside, in its internal decoration and architectural treatment is one of the boldest and finest of modern days. The "*Cours de Construction*" just published is interesting, as showing the very high standard of acquirements to which the architectural student in France is expected to attain. There are probably few engineers in England who would be able to enter so minutely, and with such mathematical knowledge, into the various calculations made for iron construction of every kind. A second volume, dealing with stone construction, will probably follow.

THE "CHAIN PIER," BRIGHTON.—One of the most interesting landmarks of Brighton, the Chain Pier, is threatened with extinction, as is mentioned in a paragraph headed "Brighton," in our "Provincial News" this week. The *Daily News* says that of late years the pier has suffered by the competition offered by its newer and larger rival, and by the westward course of fashion, but at one time it enjoyed a monopoly of patronage, and was almost as favorite and as fashionable a resort as the Steine was in the days of the Regency. Thackeray mentions more than once in his letters how he used to go on the pier in a bath-chair to recuperate when he came down to Brighton fagged out. This was in 1849. Six years earlier the pier (at that time used for a packet service between Brighton and Dieppe, before the Newhaven route was developed) was the scene of an event of special interest, inasmuch as Queen Victoria started thence on her first journey out of England, and went to visit Louis Philippe, King of the French. At this time the Princess Royal (now the Empress of Germany), the Prince of Wales, and the late Princess Alice were staying in Brighton at the Royal Pavilion, and the Queen, on her return from the Continent, landed from the Royal yacht at the Chain Pier, and accompanied by the Prince de Joinville, paid another visit to Brighton. In September of the same year she embarked from the Chain Pier to visit the King and Queen of the Belgians. These were the palmy times of the pier, which had then been open about twenty years, having been completed, at a cost of 30,000*l.*, in 1829, from plans by Captain Samuel Browne. The graceful curves of the suspensory chains, and the blackened timbers which support the four towers, and the deck at the head, are familiar enough to Brighton visitors, and the structure has compared more than favorably, in picturesque appearance, with pleasure piers of later date. When erected, it was regarded not only as a thing of beauty but as a triumph of engineering skill, and it certainly stood the test of time and the buffets of the waves in the manner at once satisfactory and remarkable. Twice, however, it seemed to have reached a crisis, as it was severely damaged in November, 1836, and again in October, 1838, on one occasion being cut asunder by a tremendous storm, but, being repaired, it has since sustained, unharmed, the shocks of the severest tempests.—*The Builder.*

THE DEATH OF LUDWIG NOBEL.—The engineering profession has suffered a severe loss in the death of Mr. Ludwig Nobel at Cannes. The son of a Swedish engineer, who invented and placed in the channels of Cronstadt the "infernal machines" which annoyed Sir Charles Napier so much, he received a practical training as engineer, and notwithstanding a temporary check experienced by the failure of his father, he managed by hard work and economy to recover in time the ironworks his father had lost, and extended them to their present proportions at St. Petersburg. But it was less in his own profession than outside it that he was destined to achieve distinction, although it was his engineering capacity that equipped him for the revolution he accomplished in the oil trade. In this respect his career was a striking illustration of the influence a modern engineer can exercise upon a purely commercial pursuit. Quite by chance, in 1876, he was led by his brother, whom he had sent to the Caucasus in search of walnut wood for the stocks of the Berdan rifles he was manufacturing for the Government, to invest a few thousands in a small Baku oil refinery. This failing to yield much profit, owing to the difficulties of transport, Mr. Ludwig Nobel applied himself seriously to solve some of them, and by degrees was drawn completely into the petroleum business. The innovations he introduced in the shape of pipe-lines, tank-steamers, and tank-cars for railways not only in a few short years revolutionized the oil trade of Russia, but that of the whole of Europe; the elaborate system of transport in bulk he established, coupled with the copious supply of cheap oil, enabling Russian petroleum to penetrate to every town on the Continent, and even flood the more distant market of India. The enormous magnitude to which his undertaking rapidly expanded, until the few thousands he embarked in the business developed to a capital of three millions sterling, was told in these columns three years ago by Mr. Charles Marvin, whose "Petroleum Industry of Russia" contained in all engineering essentials the story of the Baku oil-king's extraordinary career. To-day the Nobel firm owns the largest oil refinery in the world, the largest fleet of tank-steamers, thousands of oil trucks, and depots holding tens of millions of gallons of oil. That so much should have been achieved in a little more than ten years is a remarkable testimony to the power of organization Ludwig Nobel possessed to an eminent degree, while the wealth he amassed in a pursuit wherein merchants had either failed or made but a miserable income, shows what may be achieved by the enterprising and skilled engineer in departments of trade conventionally supposed to belong to merchants only.—*Engineering.*

MORE MYTHS FROM THE MAYAS.—The Garden of Eden is given a new location—in Central America—by Mme. Alice Le Plongeon, who with her husband, Dr. Le Plongeon, the eminent man of science, spent fourteen years in Yucatan, studying the antiquities of that country. Mme. Le Plongeon is also a firm believer in the submerged continent, Atlantis, which Ignatius Donnelly wrote about before he began to annihilate Shakespeare. She says that among the manuscripts of the Mayas, the prehistoric inhabitants of Yucatan, is an account of the sinking of Atlantis, which once joined America to the western coast of Africa and Europe. Other Maya writings give us, she asserts, the whole history of the intellectual development of the human family, free from all priestly or philosophic tinkering. The palaces and temples of the ancient race are situated in almost inaccessible forests, and the Spaniards are worse than indifferent in respect to archæological researches. They are unwilling to have their land disturbed for the sake of digging up a few more antiquities. Mme. Le Plongeon hopes that when her husband's book about Yucatan appears, as it will shortly, wide interest will be awakened in the matter of further investigations. The two explorers brought back with them to New York 2000 photographs of the pre-historic edifices, and hundreds of drawings and models. Among the latter is a representation of the mausoleum of King Caw, the first ruler of the Mayas. Mme. Le Plongeon thinks that this could be reproduced exactly in Central Park, forming an object lesson in the religion and customs of the race. She became interested in the old civilizations of Central America from her study of the relics in the British museum, and went from London to Yucatan at the age of nineteen, just after her marriage. She learned Spanish and the Maya tongue, which she says is very much like Greek, and which is still spoken by the natives. Making due allowance for the exaggerations caused by her enthusiasm, the field in which she and her husband have been working is a valuable one, and they should receive encouragement from rich people interested in archæological matters.—*Springfield Republican.*

THE WASTE OF OIL AT BAKU.—The cost of sinking a well at Baku ranges from £1,000 to £1,500. What can be obtained for such an expenditure may be illustrated by the result of boring the Droojba well, which cost £1,500. This spouted for 115 days, the yield being 3,400 tons a day for 43 days, 1,600 tons a day for 31 days, 900 tons for 30, and 600 tons for 11 days. The well was then capped over, and the supply kept underground for further wants. The total amount of oil spouted by this well, according to the lowest estimate, was 220,000 tons, or 55,000,000 gallons, and according to the highest, 50,000 tons, or 125,000,000 gallons. Had the oil been in America, it would have realized a million sterling. At Baku the bulk of it was lost. The same was the case with the great Markoff fountain last year, which spouted oil and sand 400 feet high—a veritable volcano. On windy days the oil spray was carried eight miles away. The Markoff fountain was situated not far off the Droojba, which pessimists had prognosticated erroneously would drain the whole area. On this occasion the Russian Government, which had been angered by the waste of oil from the Tagioff fountain—which spouted 11,000 tons a day the previous year, and endangered the town of Baku by raining oil upon it, although

three miles away — gave permission to the other Baku firms to lynch the "gusher" at the owner's expense. Accordingly they sent their best engineers to the spot, and after several unsuccessful attempts the well was finally capped over, and a stop put to the disgraceful waste of oil. All the same, no law exists to prevent any foreigner or Russian repeating the same destruction to-morrow. Large firms, like Nobel Brothers, mostly manage to have good engineers, and the best appliances on the spot to check a "gusher" at the outset, and allow the supply to flow as they want it; but the native firms bore heedlessly, and for want of "caps" at the right moment, all control is lost over the well, and it belches forth millions of gallons of oil, forming rivers that flow away to the Caspian Sea or sink into the earth again. To-day's telegrams from Baku announce that such a one is spouting at the present moment, causing the price of crude oil to fall to twenty gallons for a penny. If there happens to be a slight rise in the price of oil — *i. e.*, if it rises above a penny for ten gallons — the large firms build reservoirs and catch some of the oil, for which they pay a mere trifle; but if oil is plentiful at the moment, no attempt is made to store it at all. Since 1871, when the first well was sunk, 500 bores have been made, of which 200 are in operation, producing, irrespective of fountains, 500,000,000 gallons of oil every year. — *Glasgow Herald.*

Cleaning Metal and Stonework. — During the year 1886 the masonry and ironwork of the Madrid and Baudin bridges at Paris were thoroughly cleansed by Messrs. Mathieu and Peigné, who work the patent processes of M. Liebhaber. These processes, which are purely chemical in their nature, were at first applied solely to the cleaning of limestones, but in these bridges materials of a very different nature were successfully dealt with. The surfaces to be cleansed are submitted to the action of a jet of mixed hydrochloric and sulphuric acids, and left for two or three hours, when they are well brushed, and finally washed down with a water-jet, which completes the process. In the case of limestone masonry, the hydrochloric acid unites with the calcium, forming chloride of lime, which is then decomposed by the sulphuric acid forming a calcium sulphate, this being precipitated on the face of the stone, and containing all the impurities, which are then removed by the action of the brush and of the water-jet. In many cases this acid treatment will not succeed unless the stone is previously prepared, as the masonry frequently becomes coated with a black and shining deposit of all the impurities contained in the atmosphere of a large town, which entirely prevents the acids reaching the stone. In this case M. de Liebhaber, before applying the acids, covers the stone with an alkaline paste, consisting of a mixture of carbonate of soda and calcium hydrate, which he has named "tolugene." This paste is spread over the face of the masonry with a trowel, to a thickness of from 1-2 to 1 millimetre, and left there for from three-quarters of an hour to an hour, when the excess is quickly washed down and brushed off, and the acids applied as previously described. In cleaning ironwork the "tolugene" alone is used; it is spread over the work either with trowel or brush, and in the course of an hour or so will have united with all the oil of the paint, leaving the red-lead on the work in the form of a dry powder, which can be easily washed off with a jet of water. The metal is said to be cleansed much better than by the older method of burning and scraping off the paint. For cleansing brickwork M. de Liebhaber makes use of the property which hydrofluoric acid possesses of separating the silica from silicates. The work is first painted with a solution of ammonium fluoride, and this immediately afterwards is treated with a jet of concentrated sulphuric acid, which liberates hydrofluoric acid *in situ*, and this immediately attacks the silicates, robbing them of their silica. The whole surface is afterwards thoroughly washed with water. With regard to the cost of the processes, a total of 502 square yards of masonry, of which about 165 were sandstone, were treated at the Madrid Bridge at a cost of from 6.7d. to 8.4d. per square yard, and brickwork at the Baudin Bridge cost 8.4d. per square yard, the prices including the cost of erection of such scaffolding as was necessary. With regard to the ironwork, the contract price was 10d. per square yard for plain work, and 1s. 3d. per square yard for moulded work, but the contractors are said to have lost money in carrying out this part of their contract. — *Engineering.*

The Inventor of the Electric Light. — The following letter has been addressed to *The Pall Mall Gazette*, by the Rev. G. H. Staite, vicar of Sutton Cheney, Hinckley: —

Knowing your love of fair play and readiness to ventilate hidden grievances, I venture to ask the insertion of this letter, in the belief that if the facts were known some among your many readers would be inclined to entertain the claims of the family of a man who spent his life and fortune on a recognized public work of the greatest importance. My father was the originator of electric lighting, his exhibitions extending from 1847 to shortly before his death in 1854. During that interval he expended a considerable fortune, and left his family penniless. There are at the present time his widow, aged 80, two daughters, and myself. That our claims to recognition are not unfounded will be seen from the following testimony: — Professor Tyndall — "*Fragments of Science*," vol. ii., p. 424: — "To keep the carbons at the proper distance under regulators were devised, the earliest, I believe, by Staite." "*Haydn's Dictionary of Dates*," later editions, "Electric Light: apparatus for regulating the electric light were devised in 1846 and shown by Staite and Petrie in 1848." Urquhart, "*Electric Light*," edited by Webb, 1880, page 161: "Staite and Edwards patented an electric regulator based upon the heating and expansion of metals by the current to be regulated. This idea, beautiful in itself, is really the original of the regulators used to-day, and the self-same principle is employed by Mr. Edison." And Dr. Siemens, page 173: "Staite as early as 1847 patented a lamp in which the lower carbon is controlled by a movable soft iron core acted on by a hollow electro-magnet." Fontaine and Du Moncel give similar testimony. The priority of the principle of automatic regulation, the *sine qua non* of electric lighting, was decided in my father's favor by the French Academy of Science, as recorded in *Le Courrier Français*, February 4, 1849. Of his many patents and improvements no use could be made by his family; practically, as far as they were concerned, they died with my father, although they were and are still available for subsequent workers in the same field. His family feel that they have entirely lost their fortune through his public enterprise. All their money, consisting of thousands of pounds, was sunk, and by the premature death of the inventor in his forty-second year, his and their hopes of any pecuniary return were irretrievably lost. It is this combination of facts which induces me to write this appeal, every point of which I shall be most glad to substantiate should any one be kindly induced to notice it.

TRADE SURVEYS

General trade indications are more encouraging than they were six days ago. The effect of the nearly five months' restricted production is being felt in trade and manufacturing channels and benefit is also being derived from the trade combinations which have been formed. A third improving influence is the abundance of money in trade channels, or, more strictly speaking, from the defined policy of the Government in reference to bond purchases. A fourth benefit is felt from the announced intention of railroad builders to prosecute construction on a more liberal scale than for the past three months. The industries are also encouraged by the receipt of a larger amount of business for fall and winter delivery than was expected thirty days ago. A number of minor advantages could be indicated, all pointing to the fact that there is an enormous capacity for consumption in the country, and that there is already a reaction in several trade channels. Nevertheless, prices are declining; the sentiment everywhere is in favor of letting them drop to their very lowest limit before making extensive purchases or entering into contracts for future delivery. The disposition of the tariff question, in a week or two, will remove one obstacle in the way of enlarging commercial operations. The manufacturing interests are generally well engaged. Iron-makers have more cause for complaint than others; prices are still downward in both crude and finished material. Southern iron is being offered in Northern markets, but its effect is to create apprehension, rather than do actual harm by its competition. Recently published iron-trade statistics show that last year's pig-iron production was 13 per cent greater than that of 1886; steel-rail production 33 per cent greater; rolled-iron production 13 per cent greater, while the nail output was 15 per cent less. Prices declined during the year from $21.50 for No. 1 anthracite iron, at tide-water, to $19; Gray Forge, from $18.50 to $16.50; steel rails, from $38.50 to $31.50; bar iron, from $2.15 to $1.90. Total imports of iron and steel and iron ore during the past year amounted to over $100,000,000; consumption of iron ore last year, 12,500,000 tons, of which 1,200,000 tons came from abroad. During the early part of last year wages advanced; during the early part of the present year they declined as much. The actual consumption of pig-iron last year was 6,800,000 tons against 6,191,354 tons in 1886, and 4,348,844 tons in 1885. There are at present 43 Bessemer steel-works in the United States, with 89 converters; 11 new Bessemer steel-works were completed last year. Railroad and financial developments are all of an encouraging character; bank statements show an accumulation of over $22,000,000 above legal requirements. Reports from 106 railroads for April show gross earnings at $23,556,242, against $22,814,206 for April, 1887, their mileage increase being 3,200 miles. For the first four months of the year, the earnings of 105 roads are reported at $92,624,743, against $89,762,462 for the same time last year. Recently weekly reports also show a gain as compared to last year. There is a disposition in railroad-building circles, to undertake the prosecution of work in several localities in the West and South, where the indications are favorable for assured traffic upon the completion of lines. Southern railroad managers intend to do a great deal of building, mainly of short lines, and indications from these States, for the past week or two, point to the early commencement of the work. The architects and builders in some localities are as busy as last year, but in many others the case is different. New England and the Middle States are suffering more than the Western and Southern States, but in certain portions of New York and Pennsylvania there is fully as much work in hand now as last year, as is shown by a heavy distribution of lumber, lath, slate, cements, inside finishing and all other building materials. In the Northwest, according to indications from Chicago, St. Paul, Omaha and Kansas City, architects have a great deal of work in sight, and the season will be a busy one at all of these centres. The distribution of lumber is not as profitable as last year, but the volume is as great. A great amount of elevator building is being undertaken. A great deal of machine-shop and round-house building is being done by Western railroads. The phenomenal activity in the Southern States continues, and the overflow of Northern men to the South during the past few months has laid the foundation for a still greater influx of capital and enterprise. An organized attempt has been made to influence emigration Southward, and an office has been opened to engineer the movement in New York City. It will be difficult to overcome the preference in the minds of Europeans for the great West, but it is only a question of time when the advantages of Southern locations will be demonstrated more clearly. The present weekly production of iron in the United States is 122,552, against 138,514 tons last year. The erection of new manufacturing concerns throughout the country still continues. The manufacture of glass, especially window, is steadily increasing, gas-field centres being selected for new enterprises; at one of these centres there are now twelve works, with several new enterprises to be heard from. The manufacture of engines, machinery, tools and implements of all kinds, report an improving inquiry for nearly all kinds of work within the past week or two. The car-builders report no cessation of activity. Railroad managers intimate that they will place large orders for rolling-stock this fall for delivery during the winter and spring; the increasing volume of traffic justifies this prediction. The downward tendency in prices will probably reach its extreme limit in October; the placing of a large amount of business and delivery next spring and summer will follow. Quite a number of manufacturing establishments, such as machine-shops, car-works, foundries and saw-mills, are starting up in the far West. The employment of capital in the smaller industries is helping to tide over the depression in other branches. The business interests are anxiously awaiting the disposition of the several important questions now before Congress; no doubt the volume of business is from five to fifteen per cent lighter than it would be but for the fact that there are issues to be decided and laws to pass which can vitally affect the business interests of the country. But with all the uncertainties there is an undertone of confidence in commercial, manufacturing and railroad circles that warrants the belief that it is only a question of time when there will be a general improvement in business, manufacturing, railroad construction and in all of the smaller industries.

S. J. Parkhill & Co., Printers, Boston.

RESIDENCE — MORRISTOWN, N. J.

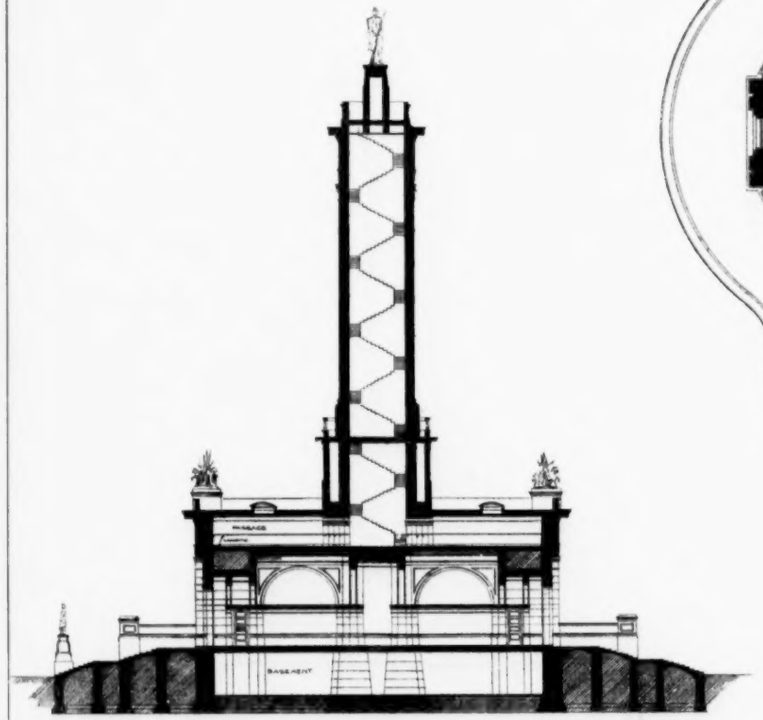
·BRUCE · PRICE · ARCH'T·

TICKNOR & CO.

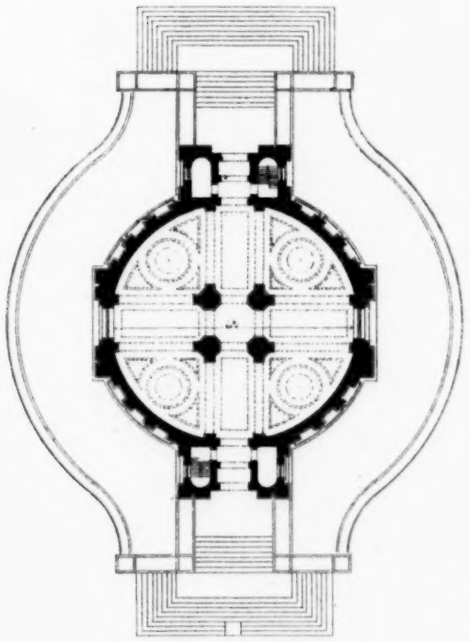
Heliotype Printing Co. Boston.

COPYRIGHT 1888 BY JAMES R. OSGOOD & CO.

A MARTIAL STRAIN



SECTION.



PLAN.

PERSPECTIVE.

COMPETITIVE DESIGN FOR THE
INDIANA STATE SOLDIERS AND SAILORS MONUMENT.

COMPETITIVE DESIGN FOR THE
INDIANA STATE SOLDIERS AND SAILORS MONUMENT.

A. J. HEMAN, ARCHITECT.

Heliotype Printing Co. Boston

COPYRIGHT 1888 BY TICKNOR & CO.

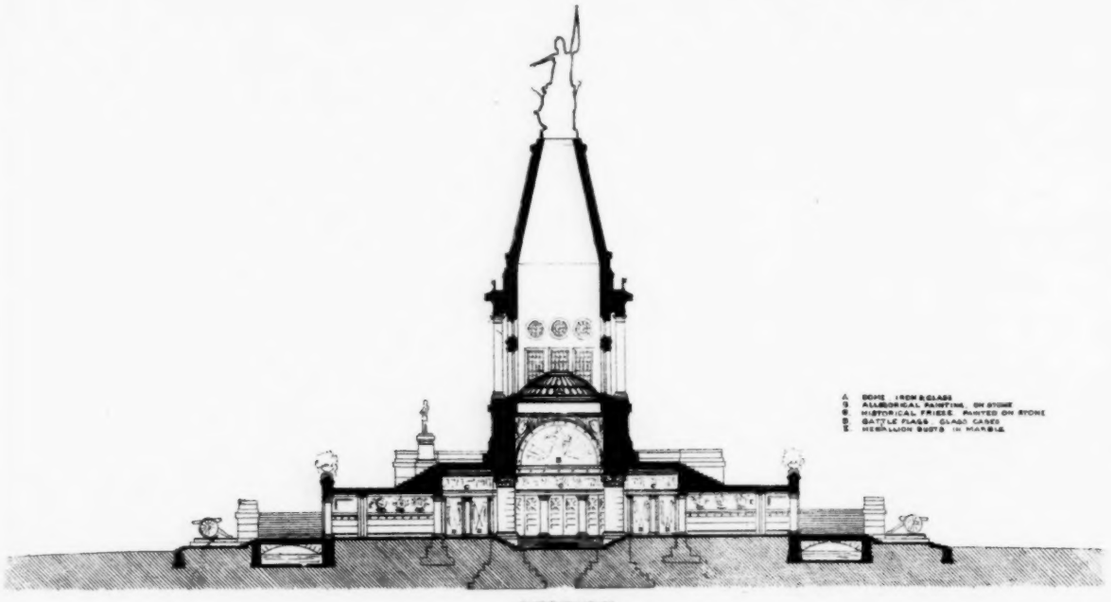
Ernest A. Coxhead A.R.I.B.A. Arch't.

Lutheran Church at Los Angeles

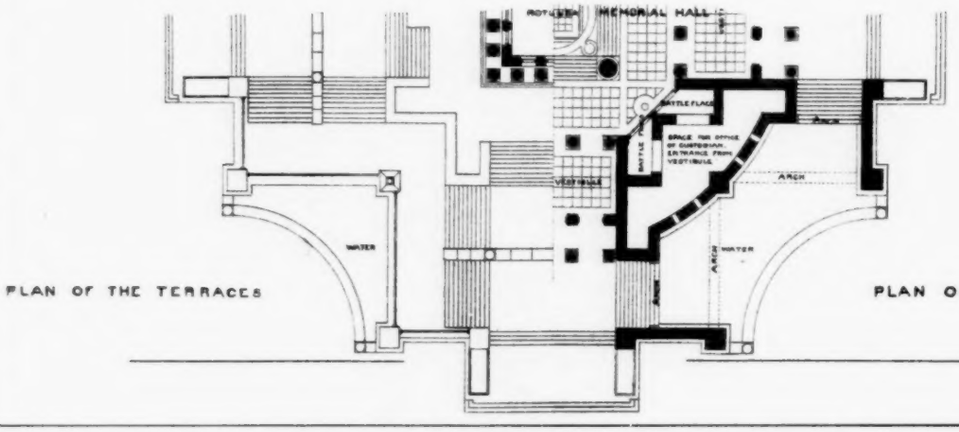
Heliotype Printing Co. Boston.

COPYRIGHT 1888 BY TICKNOR & CO

INDIANA
STATE SOLDIERS' AND SAILORS'
MONUMENT
COMPETITION
WAITT & CUTTER, ARCHITECTS



SECTION

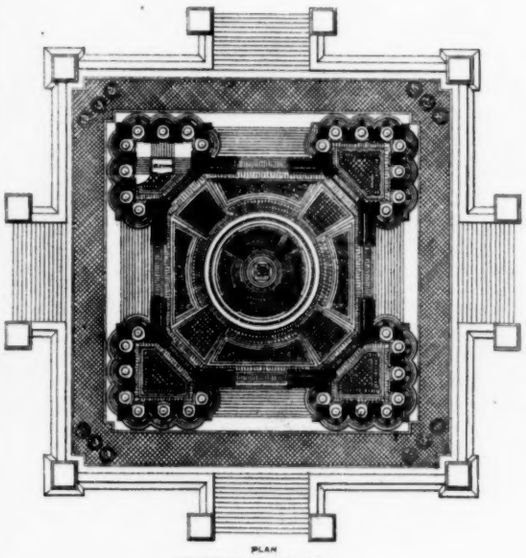


PLAN OF THE TERRACES

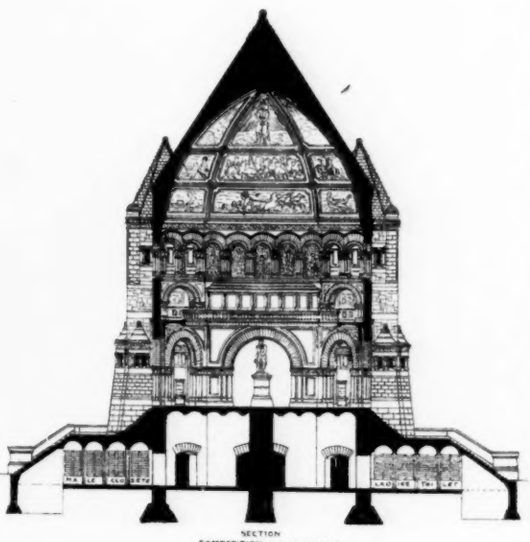
PLAN OF THE HALL

Heliotype Printing Co. Boston

COPYRIGHT 1888 BY TICKNOR & CO



PLAN
COMPETITION FOR THE INDIANA STATE SOLDIERS' AND SAILORS' MONUMENT



SECTION
COMPETITION FOR THE INDIANA STATE SOLDIERS' AND SAILORS MONUMENT
SHEET No 4

PERSPECTIVE COMPETITION FOR THE INDIANA STATE SOLDIERS' AND SAILORS' MONUMENT
SHEET No 2

Glenn Brown
archt.
607 La Ave.
Washington D.C.

Heliotype Printing Co. Boston